

California GARDEN

SEPTEMBER-OCTOBER 1987

One Dollar

Volume 78 Issue No. 5

ISSN 0008-1116



Sea World

A Landscaper's Dream

By Pat Ziebarth

Twenty-three years ago, on land that was once a salt marsh and disposal site, there emerged a landscaper's dream -- the 135-acre Sea World. This past year, the park's 60 gardeners have been working feverishly to create 19 acres of new horticultural displays for the expansion project. More than 5,000 species of plants now thrive on the park grounds.

For eight years horticulturist Susan Locke has been the motivating leader of a hard working staff. One of the trademarks of her designs is the themed color beds. The purple carpet bed around the base of Roy Shifrin's sculpture, "Winged Runner," consists of stock, violas and alyssum.

Utilizing rolling mounds, horticulturists have provided additional necessary top soil for the plants. Throughout the park, plants from all over the world are on display -- African coral tree, giant bamboos and a large variety of pines including Torrey, Monterey and Italian stone pine.

Park visitors find a special treat in the center of the grounds. A student of bonsai can see many examples of this ancient art in this authentically planted Japanese garden.

Interesting and exotic plant specimens are labeled so gardeners can take note of favorites which they would like to grow in their own gardens. Annuals and perennials are planted continuously for year-round beauty.

There are several unique challenges to the Sea World horticulturists. The salty, prevailing westerly winds, salt-laden water and soil all require special consideration.

Because brackish water is only 10 to 20 feet below ground level, plants are selected for their ability to withstand high salt concentrations around their roots. Year-round irrigation keeps salt water from rising to the surface and damaging trees and shrubs.

Sea World's gardens received the Environmental Improvement Award in 1969 from the American Association of Landscape Contractors. In 1975 the Park was named the most beautifully maintained recreation garden in the United States by the Professional Grounds Management Society. In 1985, Sea World was honored by the Professional Grounds Maintenance Society.

The pride of the new expansion is the large specimen *Ficus benjamina*. These 20-foot beauties are the horticultural focus in the plaza leading up to the new admission windows. The Compass Rose fountain is complimented by hybrid southern magnolias, rusty-leaf fig, weeping pittosporum, orchid, and Australian tea trees, pines and podocarpuses. Also on display are subtropical



Seaworld Photo

A stand of rare Torrey pine trees towers over a lushly landscaped area of Sea World in San Diego. A staff of 30 gardeners and horticulturists maintain Sea World's extensive plant collection.

tree species, including macadamia, coral and gold medallion. Notable, also, are the ginger and hibiscus shrubs. Some of the groundcovers used are abelia, dwarf holly and yarrow, red salvia, white alyssum and blue violas.

In this landscaper's paradise, meander along the winding paths between exhibits, enjoy the spectacular waterfowl ponds, gasp in awe at the new Shamu Stadium which opened Memorial Day 1987. More than 5,000 species of plants now thrive on the park grounds.

Every garden buff can learn from a holiday at Sea World where the achievements of the park's talented landscapers bring joy to more than three million visitors each year.

COVER PHOTOGRAPH

Shaded by a rusty leaf fig, the banks of a placid pond bordering Sea World of San Diego's Japanese Village are lined with sculpturesque Yaupon holly, llax vomitoria. Grassy berms and gently curving walkways provide a relaxing ambiance to the 135-acre marine zoological park, renowned for its mini-garden areas.

Seaworld Photo



Published by
San Diego Floral Association
for 78 years

California SINCE 1909
GARDEN
LIBRARY OF CONGRESS NO. ISSN 0008-1116

San Diego Floral Association &
Garden Center
Casa del Prado, Balboa Park
San Diego, CA 92101-1619
Monday through Friday
10 a.m. to 12 and 1 to 3 p.m.
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PRINTED BY:

Neyenesch Printers, Inc.

2750 Kettner Blvd.

San Diego, CA 92101

Manuscripts are invited. Deadline is 90-days prior to publication date. All manuscripts and illustrations submitted will be handled carefully but we cannot assume responsibility for their safety. All submissions must be double spaced and accompanied by return postage, if you expect them to be returned to you. Hortus Third is the authority for all botanical names used in this magazine. All opinions expressed are those of the authors and do not necessarily reflect the views of the editors of the California Garden.

Address all editorial material to:

© CALIFORNIA GARDEN

Casa del Prado, Balboa Park

San Diego, CA 92101-1619

Postmaster, Send Form 3579 to:
California Garden, Casa Del Prado
San Diego, CA 92101-1619

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New books donated by publishers, authors, or friends, are reviewed by M.L. Orphey, B.S. Jones and M.L. Sandy, and then placed in the horticultural library of the San Diego Floral Association. We welcome new books and hope you will come in to read them. The library is located in Room 105, Casa del Prado, Balboa Park, San Diego. It is normally open from 10 a.m. until 3 p.m. on weekdays. It is closed on weekends and holidays. The librarian is available on Tuesdays. The library contains many old, rare, new and interesting horticultural books plus a complete set of California Garden magazine from 1909 up to the present issue. Also, we have some horticultural magazines, including some in Russian and in Hebrew languages. The library card file is being put on the computer for reference. Also, a copying machine was recently purchased for the library. Current floral magazines are available for your reading pleasure.

In the Floral Library, Room 105, Casa del Prado, is a file on each garden club in the area. If you would like to submit copies of your newsletters, or membership information, etc., for the file, it would be appreciated. It is available for tourists, as well as persons living in the area.

Deadline for the next issue is September 16, 1987.

San Diego Floral Association is compiling a list of speakers available to speak to clubs. If interested, submit name, address, telephone number, subjects and charge, if applicable. This will be used for responding to speaker requests from various clubs or groups.

For only \$25.00 a year, a **professional business** relating to horticulture can become a member of San Diego Floral Association and be listed in each issue of California Garden magazine as a "Professional Affiliate". This listing would include name, address and telephone number of the business. It is a wonderful opportunity to reach gardeners.

We welcome articles which are both informative and interesting to California gardeners. Persons who furnish article, front cover, photos, sketches, or pictures used in the magazine will be entitled to up to 3 copies of the California Garden magazine containing their contribution, in appreciation. Since we are a non-profit organization, no fees will be paid for articles or pictures. Submit articles double or triple spaced, and include postage if you desire to have your article or photos returned.

© CALIFORNIA GARDEN (ISSN 0008-116) (USPS 084-020), a non-profit publication, is published bi-monthly for \$5.00 per year, or \$9.00 for two years, by San Diego Floral Association, Inc., Casa del Prado, Balboa Park, San Diego, CA 92101-1619, USA. Single copy is \$1.00. For foreign countries add \$1.00 for extra postage. Entered as second-class matter, December 8, 1910 at the Post Office in San Diego, California, under the Act of March 3, 1879. Second class postage paid at San Diego.

HORTICULTURE CALENDAR

*San Diego Floral Association Event

*Free **Floral Crafts Instruction** workshop with Colleen Winchell every Thursday, Casa del Prado, Rm. 105, Balboa Park, 10-3 p.m. Info: 479-6433.

***Flower Arranging Classes.** Dates are not firm. Call Marie Walsh at 298-5182 for information.

July 31 through August 27

Artists of the Month featured at the **Hospitality House** at **Descanso Gardens**. Info: (818) 790-5571.

August 22, 23

San Diego Gesneriad Society's 11th Show, Casa del Prado, Balboa Park. Sat: noon-5 p.m.; Sun: 10-5 p.m. Free.

August 22, 23

The Second Intercity Cactus and Succulent Show sponsored by the Long Beach, Los Angeles and San Gabriel Cactus and Succulent Society at Los Angeles State and County Arboretum, Arcadia, CA 9-4:30 p.m. Plant and book sale.

August 23

Begonia Lecture "Begonias of the World" by Muriel Pers, member of the American Begonia Society. South Coast Botanic Garden, Palos Verdes Peninsula, CA. 2 p.m.

August 29, 30

San Diego Turtle and Tortoise Society's 13th Annual Show, Casa del Prado, Balboa Park. 10-5 p.m. Free.

August 30

Indoor Plant Lecture by Christine Robalto. South Coast Botanic Garden, Palos Verdes Peninsula, CA 2 p.m.

September 1-30

Photo Exhibit titled "Flowers — A Closer Look" by Reny Parker at the Offtrack Gallery, 510 North Highway 101, Encinitas. Info: (619) 464-0056. Hours are Tues. thru Sun. 10-5 p.m.

September 5, 6

San Diego Professional Horticulturists 4th Annual Show. Casa del Prado, Balboa Park. Sat: 10-5 p.m.; Sun: 10-4:30 p.m. Free.

September 5, 6, 7

Fern and Exotic Plant Show and Sale by Los Angeles International Fern Society at Los Angeles State and County Arboretum, Arcadia. 9-4:30 p.m.

September 13

Origami Festival. Adults and Children can create flowers, birds, dinosaurs, etc. under the direction of teachers from West Coast Origami Guild. Learn the ancient art of paper folding. South Coast Botanic Garden, Palos Verdes Peninsula 12-4 p.m.

September 18-20

Perennial Symposium sponsored by the Friends of the Botanical Garden. Held at the Joseph Wood Krutch Theatre, Clark Kerr Campus, 2601 Warring Street, Berkeley, CA 94720. Display and sale of books, plants, and garden ornaments. Info: (415) 642-3343 or 642-0849.

September 19, 20

San Diego Bromeliad Society's 13th Annual Show. Casa del Prado, Balboa Park, Sat: 1-4:30 p.m.; Sun: 11-4:30 p.m. Free.

September 20

Wildflower talk by Charles Benz with slides. South Coast Botanic Garden, Palos Verdes Peninsula, CA 2 p.m.

September 25 through October 22

Paintings by the Pasadena Society of Artists displayed at the **Hospitality House**, **Descanso Gardens**, La Canada Flintridge, CA. Floral art will be shown. 9-3:30 p.m.

September 26, 27

San Diego Bonsai Club Fall Show, Casa del Prado, Balboa Park. 10-5 p.m. Free.

September 26, 27

Annual Akebono Bonsai Show at Los Angeles State and County Arboretum, Arcadia, CA 9-4:30 p.m.

October 3, 4

Balboa Park African Violet Society's Fall Show, Casa del Prado, Balboa Park, 10-4 p.m. Free.

October 4

Vegetable Garden Talk and Tour by Sid Horton at South Coast Botanic Garden, Palos Verdes Peninsula, CA. 2 p.m.

October 8-11

Participatory Workshop on "Intercropping and Agroforestry Strategies to Conserve Biotic Resources in Arid Lands" hosted by the Desert Botanical Garden, 1201 N. Galvin Parkway, Phoenix, Arizona 85008. Visits to Native Seeds/Search plots at Tucson Botanical Gardens and to the Arizona Agricultural Experiment Station in Tucson. Phone (602) 941-1225.

October 10

Third Annual Ecological Landscaping Symposium for Southern California Homeowners, sponsored by Rancho Santa Ana Botanic Garden in Claremont. 9-4:30 p.m. Info: (714) 626-1917 or contact the Education Department. RSABG, 1500 North College Avenue, Claremont, CA 91711.

October 10, 11

Beauty and the Beast and Annual Plant Sale at Wild Animal Park, Escondido, CA. Info: (619) 747-8702.

October 10, 11

Plant Sale of native plants propagated from cuttings of plant collections at **Descanso Gardens**. La Canada Flintridge, CA. 9-4:30 p.m.

October 11

Exotic Fruit Talk by Dr. Henry Goldsmith at South Coast Botanic Garden, Palos Verdes Peninsula, CA. 2 p.m.

October 16 through 25

Los Angeles Garden Show encompasses more than 60 model gardens with theme "The English Influ-

HORTICULTURE CALENDAR

ence" featuring displays of perennials. Outdoor gardens, indoor displays at Ayres Hall of Environmental Education. More than 40 vendors in the trade mart offering the best of retail garden supplies, accessories and plants. Considered the most spectacular garden event on the West Coast. Los Angeles State and County Arboretum, Arcadia, CA. 10-6 p.m.

October 17, 18

San Diego County Orchid Society's Fall "Mini" Show, Casa del Prado, Balboa Park. Sat: noon -5 p.m.; Sun: 10-4 p.m. Free.

***October 20**

San Diego Floral Association General Meeting with Dr. William Nelson from Pacific Tree Farms talking and showing slides. Pot luck 6 p.m., meeting at 7:15 p.m. All invited. Reservations: call 232-5762.

October 23, 24, 25

Annual Fall Show by Palomar Orchid Society at the Japanese Cultural Center, 150 Cedar Road, Vista, CA. Public is invited. Anyone may enter his orchid plants. Info: (619) 941-0382.

October 24, 25

Quail Gardens will host "A Day in the Gardens". Included will be a plant sale featuring plants from the gardens, with an emphasis on those that attract birds, ongoing tours of the gardens, a lemonade stand set up by the junior garden club, and an art and photography show and sale. All art work originates from the Gardens. Quail Botanical Gardens, 230 Quail Gardens Drive, Encinitas, CA. 10-4 p.m. Free, although there is a parking fee of \$1.00.

October 24, 25

Sogetsu School of Ikebana Show, Casa del Prado, Balboa Park, San Diego, CA 11-4:30 p.m. Free.

October 25

Bonsai Exhibit presented by South Coast Bonsai Association at South Coast Botanic Garden. Palos Verdes Peninsula, CA 9-5 p.m.

October 28-November 1

Homemade country and holiday crafts from personalized gifts to Christmas trimmings for sale, created by over 100 craftspeople and artists. South Coast Botanic Garden, Palos Verdes Peninsula, CA 9-5 p.m.

October 31, November 1

San Diego Tropical Fish Society's 17th Show, Casa del Prado, Balboa Park, San Diego, CA. Room 101. Sat: noon-6 p.m.; Sun: 9-4:30 p.m. Free.

October 31, November 1

Glendale Chrysanthemum Society's Show and Sale at Descanso Gardens, La Canada Flintridge, CA. 9-4:30 p.m.

November 7

Rancho Santa Ana Botanic Garden in Claremont, CA will hold its Annual Native Plant Sale including a book, bake and houseplant sale from 8-2 p.m.

A collection of rare and threatened California plants will be available. Info: (714) 625-8767.

January 18-21, 1988

International Garden trade Fair (VTB) will be held at the Jaarbeurs Exhibition Center in Utrecht, Holland. The 1988 VTB will be open daily from 10 a.m. to 6 p.m.

Fees for admission to the following gardens are \$3.00 for adults; \$1.50 for visitors over 62, and students from 13 through 17 years; 75 cents for children 5 through 12 years; and free for ages 4 and under. Seats on guided trams remain at \$1.50. Free admission day is on the third Tuesday of each month.

DESCANSO GARDENS, 1418 Descanso Drive, La Canada Flintridge, CA 91011. (818) 790-5571.

LOS ANGELES STATE AND COUNTY ARBORETUM, 301 N. Baldwin Avenue, Arcadia, CA 91006-2697. (818) 446-8251.

SOUTH COAST BOTANIC GARDEN, 26300 Crenshaw Blvd., Palos Verdes Peninsula, CA 90274. (213) 772-5813.

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Mazes and Labyrinths

By Patricia Wellingham-Jones

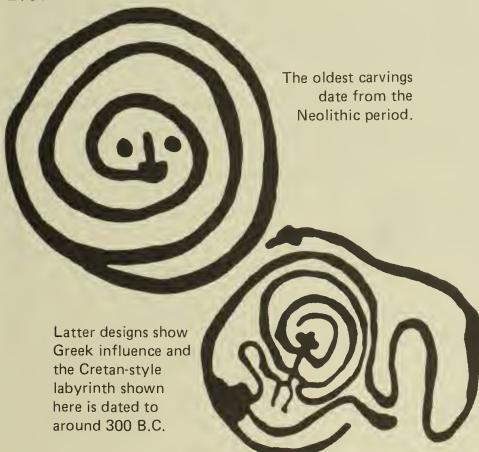
Maze: An intricate pattern of passages (as hedge-bordered paths) that ramifies and interconnects in a confusing way.

Labyrinth: An intricate, sometimes symbolic, pattern.

...Webster's Third International Dictionary.

The mystique of mazes and labyrinths goes back in history thousands of years. Though the one thought to be earliest is Knossos, on the island of Crete, where Theseus killed the minotaur, research shows otherwise. The earliest Cretan palaces were founded around 2000 B.C. However, a labyrinth was known to exist in Egypt circa 3400 B.C., forming the design for King Perabsen's tomb in the Second Dynasty.

In the long barrows, camps, megaliths and henges of Britain, radio-carbon dating shows labyrinthine designs carved on rock circa 4500-2500 B.C.



Real Origins of the Maze

The real origins of the maze are probably to be found in its deep significance to the peoples of the world. The maze is not a local tradition. Remnants have been found on all continents and the labyrinthine pattern is used in a variety of ways.

Historians have developed several theories about the original meanings of these designs. Most of the theories delve deeply into the spiritual and unconscious needs of early man, though today's mazes seem to be simple imitations of very old

symbols.

The guardian ghost story links the labyrinthine pathway with death. Death was perceived as an ordeal to be gotten through and the labyrinth was a map of the underworld. The tortuous path leads the person inward toward death, then outward in rebirth - a common theme in many of the world's religions. The mazes took the form of stone carvings, turf cuttings, and sand drawings.

Rebirth was an important feature for many early people, with initiation rituals at puberty, and fertility festivals in the spring. The maze guaranteed that the way was known only to the initiate, and made unauthorized entry difficult. The labyrinth design was drawn on doorsteps in Britain to keep witches and evil spirits out. Even today, in China, a transverse "spirit wall" inside an entry serves the same purpose, since evil spirits are believed to fly only in a straight line.

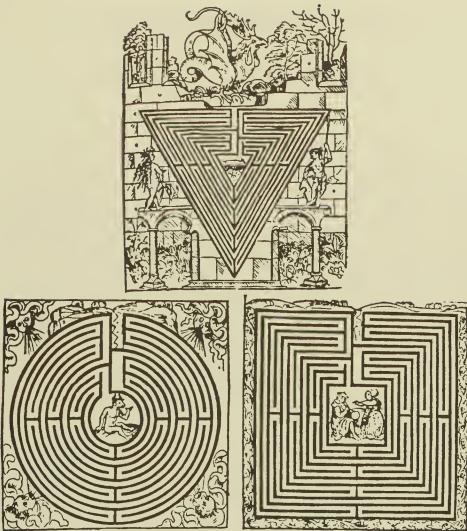
This was another function of the maze or labyrinth, protection. The turf mazes of Britain and stone mazes of Scandinavia are often found guarding important places; for instance, St. Catherine's Hill in Winchester, the site of an Iron Age camp.



Turf mazes are today associated primarily with England, just as stone mazes are thought of as Scandinavian.

Maze dances developed to weave a magic entanglement and spread magical forces of protection. Best known is the Crane Dance on the island of Delos, but the English Morris Dance is connected with maze dancing, too.

Church mazes have been found throughout Europe in Christian times. The traditional interpretation says that the labyrinthine pattern symbolizes the folds of sin barring man's pilgrimage to heaven - a variation of the themes described above. They may also protect the worshipper and church from evil influences, and are found in tile or stone, on walls, windows, and floors of sacred buildings.

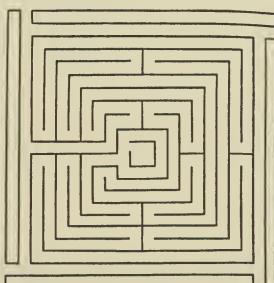


Three labyrinth designs from a work by Stabius, *Concerning Mazes*, published in Nurnberg in 1510.

The Hedge, or Garden, Maze

By the end of the 16th century, the garden maze had become popular in Europe. Wealthy landowners planted flowers, herbs, and dwarf shrubs in elaborate designs and mazes; the knot garden beloved of herbalists is a reminder of these days. In later years, taller hedges, 6 to 8 feet high, became the vogue. Here guests could become deliciously lost as the owner watched their fumbling progress from a hill. Hampton Court Palace, near London, is the oldest surviving hedge maze of this sort, replanted in 1690. The Victorians took mazes to their hearts.

Hedge mazes are enjoying a revival of interest recently, with non-traditional designs



based on owners' interests and often constructed for community pleasure as well as a status symbol - and tourism. There are 50 currently open for visiting in Britain, many at old stately homes and gardens, and a growing enthusiasm is surfacing in North America. Well worth visiting are those in Van Dusen Botanical Gardens, Vancouver, B.C. and at the Governor's Palace, Williamsburg, VA.

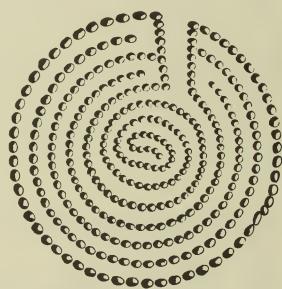
The Ivy Maze

There are two types of mazes, unicurval (where the path from the outside to the center has no false turnings) and multicurval (with several dead ends or many routes to the center). This means that the home gardener can make his maze as simple as a snail's spiral, or as complex as his acreage and hired workman can contemplate.

Most mazes have been composed of shrubs or trees: holly (as in Williamsburg), beech and yew (traditionally English), fruit trees for the edible landscaper, privet or boxwood. For the small space garden, however, ivy is an ideal subject for a maze.

A variation on the stone maze is a real possibility for the true ivy collector, the one with hundreds of pots of ivies and nowhere to put them. A complex path can be outlined with pots of ivies, interspersed with flowers for color, if desired.

Sweden is not the only country where stone labyrinths are to be found. According to Matthews' *Mazes and Labyrinths*, they can (or could) also be found in Lapland, Finland, and Norway.



Ivies, planted in long narrow borders, can lead guests in a twisting path to the front door, in a miniature version of the classical maze. These same ivies can replace the boxwood outlining the traditional herb, or knot, garden. Ivies can be severely pruned and trimmed, thus keeping them within the framework of the design.

They are even easier to control when confined to planters. Long planters of ivy and flowers can be arranged in an intricate pattern, with perhaps evergreen shrubs marking turning points and adding visual interest. Planters are also movable, for the gardener who likes to "change the furniture around."

For those wanting a tall maze, ivy growing on a wire or chain link fence makes a "hedge", ideal for covering large spaces neatly. An ivy maze done in this fashion has several advantages. It fills in much faster than do evergreen shrubs. It doesn't require the massive pruning in later years (an occasional shearing will keep it in line). It intrudes less deeply into the path. Replacement plants are less noticeable, if needed.

If this sounds too massive for your garden, maybe the suggestion of a maze will work. A simplified partial labyrinth, based on ancient designs, could feature an S-curve or spiral, dividing garden areas, forming the backdrop for flower beds, or leading to a private sitting area with graceful bench.

One such curving screen I have seen features blocks of green and variegated ivy on metal fencing. The serpentine brick walls at Kenmore, the handsome Colonial stately house in Virginia, lend themselves to this treatment, too.

If you are interested in history, and its magic, do not be amazed if the modern maze intrigues you. Ivy makes it possible, even in the home garden, without the investment in time and space the traditional labyrinth costs. You, too, can enjoy the links with the past and the beneficial and soothing effects of such perfect balance and harmony, with ivy.

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Olives

By B. Francis Klein

What do you think the olive is, a fruit or a vegetable? You're right if you say it's a fruit.

First brought to this country from Mexico by Father Junipero Serra and his Franciscan missionaries in about 1769, the first olive tree was planted in what is now California at their new San Diego Mission. Olives, however, are not new to either civilized or ancient man.

Olive oil and green ripe olives were first used for everything from balms to medicines way back in the time of the ancient Roman Empire. But ripe eating olives for table use started out from the first crop of that first tree planted in San Diego.

After being sorted and graded for size, they are placed in vats, where they undergo a milk alkaline treatment and develop their nut-like flavor. Then they are soaked in a brine solution and allowed to rest or cure.

After that all takes place, they are jarred or canned, and they are ready to eat. But never, never eat one right off the tree — you'll hate yourself for doing that.

B. Francis Klein was a regular contributing syndicated columnist for Copley and has written for other magazines.

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Ornamental Fish Ponds

By Bob Fenner

"What a beautiful pond! Look at the colors of those fish! Your pond is so clean, you must spend hours working on it."

Ornamental pools can be a beautiful asset to a home and garden, adding pleasing sights and sounds, and soothing the nerves. On the other hand, a poorly designed and built aquatic system can be a definite distraction, resulting in cloudy, algae-ridden water which can make the fish impossible to see and the pond unsightly in general. The single largest reason for this is inadequate, inappropriate filtration. The purpose of this article is to explain the design, construction, and management of the ideal pond filter.

Surprisingly enough, amongst the fishpond filters most often encountered, the most appropriate is inexpensive to build and maintain. This design requires the least time in cleaning and upkeep, and very importantly, less electricity to operate.

There are several types of ready made filters available on the market. These generally consist of a closed container of metal or fiberglass and some type of filtering material; cartridges, diatomaceous earth, or sand. The problems with all these "closed-container" mechanical filters are: 1) they have a limited capacity per surface area and therefore must be cleaned often; 2) they require pumping systems designed for high pressure/low volume which results in higher costs, especially when you pay to maintain the pressure in the filter when it becomes clogged; and 3) these filter systems go "anaerobic" (without oxygen) a short while after being shut off, resulting in the buildup of toxic products like ammonia which are washed into your pond upon the pump's restart, possibly killing your fish.

It may be that all the ponds you've seen have these types of filters, and you hear the owners complain of high electrical and chemical algae control costs. More maintenance time is also required, and the pond may still appear unsightly. Is this the way it has to be? The answer is an emphatic no! What about natural ponds, streams, and lakes that seem to stay crystal clear with no apparent filtration? What's the difference? The answer is that these systems possess a biological "balance", a mix of organisms, mostly bacteria, that recycle waste products and hence compete with algae. Sometimes, the biological systems within artificial pools become overloaded with excess nutrients, causing an imbalance which results in algal blooms.

How can you achieve and maintain a balanced system? What is needed is a combination of mechanical, chemical, and biological filtration. Mechanical

filtration removes large particulate matter. Chemical filtration buffers chemical changes in the water as it ages, and is especially important in systems with many fishes and large amounts of food. Biological filtration finally, consists of the maintenance of thriving populations of "aerobic" (oxygen utilizing) organisms that keep the bacterial/algae system in balance.

How is this seemingly complex system actually put together? Basically, all it takes is an open container, gravel, and moving water. If your pond hasn't been built yet, set aside some space within the pond system itself as your filter "box". Many configurations are possible, depending on the shape, size, and whether or not your system has more than one level.

You can push or pull the water through your gravel filled filter box where the "good guys" aerobic species of bacteria live. Here is where some of the money savings come in. Unlike the closed container, high pressure type filters, open gravel boxes can use low volume/low pressure, smaller operating cost pumping systems. Also, since open filter systems produce minimal toxic wastes when shut down, they can be safely run on a daily on/off cycle which saves money. We install smaller pumps and run them on a timer anywhere from a few hours to 24 hours per day.

Our hypothetical pond with filter is actually a pond in La Jolla, California, which we converted from a diatomaceous earth filter to a system in which the upper pond is utilized as the filter box. First, we erected a wall of brick and block with mortar and matching capstone. We left several bricks out of the bottom of the wall to allow water to flow through underneath up through the filter medium. In the filter area, we supported 16 gauge stainless steel screen with red brick, placed plastic screen on top of this, and finally added 18 inches of washed 3/4 inch gravel which serves as the filter medium.

In contrast to the previous filter which required backwashing after only a few hours use, this new system needs to be cleaned about once a year. Cleaning consists of simply running water under pressure backwards through the filter bed and removing the water and wastes from the other side of the wall with a drain or pump.

For the purists among you who wish to achieve the balanced system of which we spoke before, but without a gravel filter or even running water, there is another way. This method requires that your system be well planted, and that you maintain few fishes with light feeding. Obviously, those of you who prefer to concentrate on aquatic plants would benefit from this system.

In either case, other aspects of good aquatic maintenance should not be overlooked. A combination of ornamental aquatic plants and oxygenating grasses, frequent partial water changes, removal of debris, feeding nutritious, digestible foods, and perhaps partially shading your pond, will all add greatly to the ease of maintaining and enjoying your pond.



Photo by Wilbur Glover

Proteas

By Alison M. Voss

THE BREAKTHROUGH

On a spring Sunday in 1964, Asper Sr. remembers walking around his property with his friends, Horace (now deceased) and Mary Anderson (currently, Mary Anderson Chamberlain), then owners of La Costa Nursery in Leucadia. While walking through the flower fields, they passed a bush of *Protea coronata*, and were all struck by a lime-green, "bearded" protea in full bloom — the first flower ever on Asper's plants. Mary Anderson was enchanted and said, "Oh, would you please sell me this flower, Mr. Asper?" He replied, "I guess so. What's it worth?" She said \$1, and Asper said yes, he'd be glad to take her money! So, the first protea ever sold in the United States ended up in a flower arrangement for a party given for the late Magdalena Ecke, wife of Encinitas Poinsettia king, Paul Ecke Sr.

The first years of the protea venture were somewhat lean. In November of 1963, Asper and his wife, Hazel, moved permanently to the present site of Green Valley Nurseries. The protea crop was still an uncertain venture, and the Aspers supported themselves by growing and selling camellias. They later gave this up because of camellia petal blight. In 1964, Howard Jr., left his realtors job in Los Angeles, and together with his wife, Marilyn, and their twin sons (one's now a minister in Boston, and the other is a police officer in Escondido), joined the Asper Sr.'s in Escondido where the family formed a partnership. Income

from the camellia crop as well as a few timely real estate deals helped them to get through.

Since Asper Sr. was already selling camellias as a cut flower to the wholesalers, he just started bringing along proteas as they became available. When Sr. first brought an armful of these unbelievable blooms over to Thornton in Encinitas, he vividly remembers the wholesaler exclaiming, "What the --- is them?"

Asper Jr. also remembers trying to sell this unusual new cut flower crop to the florists, and running into the same problem. When retailers were first introduced to these extravagant, long-lasting flowers, they asked, "What do you call them?" Well, when they were told, "*Protea nerifolia*", the florists were stymied. Retailers have always felt that it's difficult to sell any plant, especially a new one, if it only has a scientific epithet. To really be competitive a plant should have an easy to remember, catchy, common name. The Aspers thought and thought. Finally, Jr.'s wife, Marilyn, came up with the perfect name for *P. nerifolia*, and to this day it's known as 'Pink Mink'. As a trade name, 'Pink Mink' has to be almost perfect. It's colorful, euphonious, memorable, and people like mink — it sounds luxurious. The name really caught on. But, if you try to buy a 'Pink Mink' out of this country, Asper Jr. laughs, "they wouldn't know what you're talking about, and would probably lock you up!" This enchanting flower has become a perennial favorite with Hazel Asper, and many, many others, all over the world.

In 1970, Sr. decided to retire, and he sold his remaining stock at Green Valley Nurseries to his son. Unfortunately, he wasn't really ready to stop working. For a while he operated as a landscape consultant, and then he got into property management. From 1978 until the mid 1980's, he acted as a consultant for a new cut protea farm in Rancho Santa Fe. The resulting Zorro Protea Farms sit on 40 acres of gently rolling hills just east of Rancho Santa Fe. Zorro raises 35 species carefully matched to specific soil requirements. While some cut flowers and foliage are available throughout the year, the peak harvest and shipping season is winter. Zorro sends cut proteas countrywide to retailers, florists and individuals.

The market has changed a great deal in the intervening years. Competitors are always surfacing. Growers in Hawaii are getting in on the act, while the newest competition comes from Australia and New Zealand. Both Aspers feel that while these growers are not an immediate threat (fuel costs for shipping add to wholesale costs), the real problem lies in that these other growers can provide cut flowers during our off season, and then at slightly lower prices, so the market during the rest of the year is effected.

PROTEA CULTIVATION

Both Aspers have some basic recommendations for protea growers.

- * Plant proteas in **clean** soil, they are very susceptible to root rot.
- * They like to be in full sun, in a well drained area, with some wind or air movement. The best exposure is southwest on a hill with ocean breezes.
- * Proteas are "acid lovers" like camellias and azaleas, so the soil PH should be 5 1/2 to 6 1/2.
- * If the soil is "heavy", mix in some humus at the ratio of 1 part fir bark, redwood shavings, or oak leaf mold, to 3 parts of your soil.
- * Build a water basin 2 feet around the protea, and mulch to 1 1/2 inches.
- * Water no more than once a week, and then to root depth — they can be watered overhead as well.
- * Proteas can be pruned but **don't** stake them.
- * Jr. recommends 6-6-4 liquid fertilizer once a month from March first through October first, while Sr. recommends light hand feeding with cottonseed meal three times a year — at Easter time, the Fourth of July, and Labor Day.

'Pink Mink' is probably the most satisfactory plant in this unusual group for the average gardener to grow. It grows to 5 feet tall, and 3 to 4 feet wide within 6 years from seed. At 15 years of age they can be double this size, but will have started to decline and should be replaced. Blooming starts 4 years from seed, or 2 to 3 years from

seedlings, and plants will become prolific flower bearers with age. 'Pink Mink' prefers acid soil, perfect drainage, moderate summer water, protection from dry winds, good air circulation, and full sun. Seedlings are frost tender, but older plants will tolerate 25° to 27°F. for short periods.

Besides *P. nerifolia*, the Aspers recommend *P. cynaroides* (the name alludes to the flower heads which resemble a globe artichoke — *Cynara Scolymus*, *P. obtusifolia*, *P. eximia*, and *Leucospermum nutans* as the easiest species to grow.

Protea cynaroides (commonly called the 'King Protea'), is a stunningly huge (up to 12 inches across), velvety-pink flower (heaviest blooming period is in the spring and summer) on a 3 to 5 foot tall, open bush, and was designated the state flower of South Africa in 1976. This very successful, and variable plant has become an important part of the world cut flower market. The 'King Protea' is one of the easiest and most adaptable of all the proteas to grow. After flowering, the spent flower heads should be cut completely back, while woody, older plants that have stopped blooming, can be rejuvenated by cutting the entire plant back almost to the ground.

P. obtusifolia becomes a bush 6 to 12 feet tall, with leaves resembling eucalyptus, and the typical cone-shaped inflorescences with cream or pink colored bracts and fuzzy, creamy-pink interior flowers. In nature, this species is almost unique amongst proteas, in that it naturally occurs in limestone, or limestone derived soils. While this means that *P. obtusifolia* is pre-disposed to our high alkaline soils, it also performs well in acid conditions and alkaline soils, it also performs well in acid conditions and alkaline substrata. In protected cultivation it can become the size of a small tree — up to 12 feet tall, and 15 feet wide, and will flower heavily during the fall and winter.

P. eximia has similar flowers to *P. obtusifolia*, except that they bloom throughout most of the year. This remarkable species (whose name means excellent) is a robust grower that can quickly attain 6 to 15 feet tall. In the wild, it has an extensive range, from low, mild, and moist elevations, up to high arid areas, and with extremes of heat and cold (they'll tolerate light frost) in between. It's so robust that seedlings should be regularly tipped to encourage branching, while faded blooms need to be immediately dead-headed to force more compact growth. *P. eximia* is best planted in groups of 3 to 4 plants to give each other support, and it's prone to leaf miners.

Leucospermum nutans, is the easiest of these plants to root from cuttings, and makes a tidy, round shrub 4 feet tall by 4 feet wide. *Leucospermums* are sometimes called the pincushion proteas, and *L. nutans* (or the nodding pincushion), which starts to bloom in late winter and can continue for up to 6 months, is noted for its interesting, flower head clusters, which make superior cut blooms. These are composed of individual, waxy, tubular, coral flowers, tipped with yellow. The

flowers curve around making a loose, open ball shape, that springs back when squeezed. Older plants can take mild frost.

Other proteas that are sometimes available, and easy to grow are *P. magnifica* (or Giant Woolly-beard), *P. grandiceps*, *P. repens* (Sugar Bush, or Honey Protea), *P. speciosa* (Brown-bearded Protea), *P. pulchella* (or the Gleaming Protea), *P. compacta*, and *P. laurifolia*.

Proteas have become one of the crowning jewels in the world cut flower trade, and Asper Sr. is proud that Jr. has continued to develop the protea business for this crop. Jr. does everything from advising people as to what proteas to plant for market crops, to harvesting them in season, and to wholesaling them for the growers. Home-owners can buy plants in containers for landscaping, and get specific cultivation instructions. Green Valley also sells and ships gift box selections of cut proteas, as they're available throughout the year. Asper Sr. says that his is "becoming very well known among protea growers and users, and it's all due to his own effort. That's his crowning achievement -- as well as being the father of twins!"

When I asked Jr. what he thought his father's crowning achievement as a horticulturist has been, his face lit up and he quietly said, "Oh, you should see his hybrid Camellia 'Valentine Day'!" But that's another story.

PROTEA NURSERIES

Tropic World Inc., 26437 N. Centre City Parkway, Escondido, 746-6108.
Green Valley Nurseries, 9928 Protea Gardens Dr., Escondido, 745-7680.
Feather Acres Farm & Nursery, 980 Avocado Place, Del Mar, 755-3093.
Walter Andersen Enterprises, 3642 Enterprise St., San Diego, 224-8271.
Presidio Garden Center, 5115 Linda Vista Road, San Diego, 297-4216
Bonita Garden Center, 3434 Bonita Rd., Chula Vista, 425-5020.

GIFT BOXES OF CUT PROTEAS

Zorro Protea Farms, 7742 Herschel Avenue, Suite Q, La Jolla, 459-8522.
Green Valley Nurseries, 9928 Protea Gardens Dr., Escondido, 745-7580.
Protea From Shirl, Montanya Dr., Valley Center, 749-0691.

RECOMMENDED BOOKS

The Proteas of Southern Africa — J.P. Rourke/Centaur Publishers/1982 Johannesburg
South Africa's Proteaceae: Know Them & Grow Them — Marie Vogts/1982 Proteaflora Enterprises/Melbourne
Proteas For Pleasure — Sima Eliovson, ISBS Timber Press

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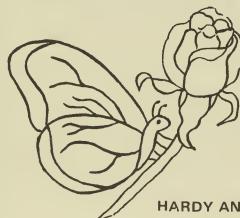


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Salt Spray

By Shonin Yamashita

There are two kinds of salt spray; one is like a mist, which can be felt on your face, the other is a fine "fume". It cannot be smelt or seen. When you park your car near a beach, the windshield of the car becomes smeared in a half hour's time. This is an example of salt spray.

Damaging effects on your garden trees and plants near the beach cannot be over emphasized. One time I planted a half dozen, ten foot Japanese pine trees, fifteen feet from the pounding surf. They were all dead within a few weeks time. White salt particles were clinging to the pine needles like decorated Christmas trees. Strangely, behind the house, 30 feet from the surf, cinerarias and pansies thrived like nobody's business.

Hakusha-Seisho is a typical seashore scene in Japan. Hakusha (white sand) and Seisho (green pine), this closely tied combination, is not only a beautiful picture, but is an ideal swimming ground. The pine trees provide cool shade for swimmers on hot summer days. In Japan, big pine trees are growing right next to the surf, some a foot or more in diameter. Why then, can't the same Japanese Black Pine survive on the San Diego beaches? The culprit is the strong salt content

of our sea water. Old gardeners, like myself, did not know this fact until those pine trees died in La Jolla. Pines in Santa Cruz and Monterey thrive because the sea water up North is not as salty as ours.

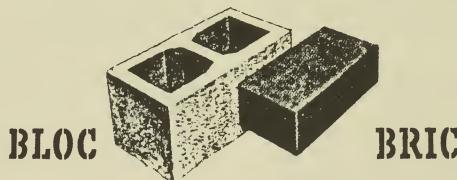
Then how about our own Torrey Pines? Is it because they are of a different variety which is resistant to salt spray? -- or because they grow high up on the hills away from the direct spray of the salt water? Someone needs to find out for sure.

All of those Italian cypress trees and Hawaiian ferns are dead or dying on the west side of Point Loma hill. Monterey cypress trees thrive in the beach area, but away from the beaches in the San Diego area, they thrive happily, when young, but become sick and woody as they mature. Is this because they are in a different zone?

My observations here are not conclusive. I would like more information about the questions I have raised from our gardeners in the San Diego area. I would also like any information available on: salt spray on Bonsai materials, and salt spray on bedding plants.

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People of the San Diego Plant Scene



By Edalee Harwell

NEWSNOTE: The Garden Page of the San Diego Union recently ran an article about Perennial Adventure, the La Mesa nursery of unusual plants owned by Christine Wotruba. A little-known plant called *Talinum* was featured. The sports page of that same edition headlined the running of the Florida Derby, one of the top races leading to the Kentucky Derby. The winner, a colt named *Talinum*. The writer of this garden article with a touting scoop was Betty Newton.

Who is BETTY NEWTON?

Her bow has more strings than a harp, and she shoots arrows of accomplishment in all directions. It is San Diego's good fortune that Betty Newton, born in San Diego and raised in La Mesa, chose to return here to focus her activities.

It was Betty's good fortune that, following graduation from Grossmont High School, study at San Diego State and Pomona Colleges, and marriage to Gilbert Newton, she chose to continue her schooling at UCLA.

Pursuing a degree in Political Science, Betty also went to work there in the Botany Department, typing theses for graduate students. This was the era of Mildred Mathias and other botanical greats, a stimulating atmosphere for someone already at home in the plant world. Assisting Ralph Philbrick in his early efforts to untangle camellia nomenclature, Betty had a hand in plant history.

This work helped form a foundation for *Camellia Nomenclature* edited by William E. Woodrooff. Now in its nineteenth edition, this is accepted worldwide as the authority on camellias.

Graduating in 1959 with a degree in Political Science, Betty returned to San Diego to start a family. Later she took a job teaching remedial reading, but continued to indulge her hobby of plants. Then one day the plants became more than a hobby when she took a boxful of iris to a swap meet.

"They were good plants, good varieties, and people don't always appreciate things they are given, so I decided to sell them. When I found out how well plants sold, it was back to school for more botany and submission for a nursery license," said Betty with a grin. "And I finally did open up my own nursery in the backyard. It was a real nursery, inspected twice a year by State Inspectors, but they laughed." One thing led to a dozen others. Asked for advice on landscaping for an office building, Betty soon found herself with several paying jobs as consultant in landscape design. To further another hobby, photography, she traded one year-long job for a Minolta camera and equipment. Good equipment does not automatically result in good photography, but Betty explained that her father, Perley L. Hale, was an artist. "I grew up loving to watch him at work."

In 1977 Grossmont Adult school hired Betty to teach an adult education class in Shade Garden Plants. It turned out to be a later class on landscaping that brought people flocking. Now she teaches three three-hour classes a week on landscaping, plus another on drought-resistant plants, and occasionally one on indoor plants. This spring she began a new class on year-round color in flower gardens. In addition, she gives talks to garden clubs and other groups.

Writing a regular column on plants and landscaping for the Escondido Times-Advocate, and the Daily Californian resulted in Betty's book *Gardening Beautifully in Southern California*. This is an edited version of her first six months of writing for these columns and can be purchased at Cole's Books, La Jolla, and The Bookworks in Del Mar (\$6.50, Roylston Press, 1983).

Finally lured away by the San Diego Union, she became one of their garden writers in 1983 and her articles and artistic photography now appear regularly.

With both educational and practical backgrounds for the job, Betty is also well-founded historically for her dedication to San Diego plant promotion. Her grandmother, Edith Hale, went door to door in early days with a coffee can to collect money for new plants for Balboa Park. Betty now lives in El Cajon with her lawyer husband Gilbert, daughter Holly, and one chocolate-colored Burmese cat.



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Broadleaf P4 Polymer

By Rebecca Lawrence

At the meeting of the Balboa Park African Violet Society, Mr. Bob Hill, Chairman of the Board and Mr. Dale Dawson, President of Broadleaf Industries spoke on their unique new product 'Broadleaf P4' which is the latest soil improver on the market. P4 are tiny crystal-like granules called polymers which, when poured into water, absorb from 200 to 400 times their weight, and last at least five years in the soil.

They showed a short film strip which illustrated the variety of uses for P4. It has the potential of revolutionizing the agricultural business in that plants survive and thrive even in dry arid regions, because the polymers store the water and release it to the plant as it needs it.

The gel-like polymers are mixed with the potting soil at a ratio of about 1 part polymer to six parts soil. You may mix the tiny crystals and then water the soil thoroughly to start the expanding action, or wet the P4 first at a rate of 1 ounce crystals to 4 quarts of water. It is recommended that the crystals be wetted first and then blended together well with the soil. The gel retains water that normally would drain from the soil so that the plants have a source of moisture even after the soil dries. This helps plants survive temporary periods of drought. It has special implications for potted plants, hanging baskets, ferns and other plants which need fairly constant moisture.

The gentlemen gave a lively and interesting presentation and were met with much enthusiasm and many questions. They shared their experiences candidly as to the development of this product even telling us some of the disasters which occurred during research, such as the time they transplanted many large palm trees giving specific instructions to the gardeners handling the job. However, the gardeners took it upon themselves to put many times more than the recommended dry crystals into the soil at the time of planting, and several weeks later after a heavy rain, the polymer expanded to such a rate that the Palm trees were literally pushed up out of the soil and listed at various angles! They talked about the fact that the only real problem is that if you use too much you can 'blow the plant out of the soil'. The polymer, when exposed to the sunlight, with no moisture added, will contract again to the crystal size.

When added to the soil, the plant's root system is very attracted to the P4 gel and grows around and through it so that the P4 actually adheres to the root system also creating more oxygen as the polymer expands and contracts with the

amount of water it is holding. Use of P4 can change one's watering schedule so that if you previously watered once a week, you would only need to water once every two weeks. You don't need to worry about overwatering because the soil can't waterlog as easily. If you are going away on vacation and skip a watering, or the soil dries out more quickly than expected, the plant won't die.

The product is also beneficial for plant cuttings, leaf starts and transplants in that it virtually eliminates plant shock.

We were thrilled that they brought some of the P4 to sell. It went quickly, as we are all anxious to try it on our African violets and other plants. There are specific instructions with each container and it is soon to be available at most nurseries. Currently it is carried at the Safeway grocery stores, Presidio and Walter Andersen's Nurseries in San Diego. If you can't find it locally you can write to Broadleaf Industries, 6150 Lusk Blvd, Suite B-103, San Diego, CA 92121.

It is recommended that the P4 polymer be applied at the time one is transplanting or planting. It can be applied to existing plants, but is less efficient as the crystals must be pushed down into the soil with a pencil and then watered. Since the polymer should be placed around the root system, it is harder to place it there with an established plant.

If you haven't seen the April, 1987 'Sunset' magazine there is an article beginning on page 252 fully illustrated, introducing the Broadleaf P4 polymer.

Rebecca Lawrence is the Newsletter Editor for Balboa Park African Violet Society.



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Sunflowers Can Be Giants

National Garden Bureau

CULTURE FOR LARGE SEED HEADS

The sunflower is a very vigorous growing plant, reaching 6 ft., in 5 months. To keep up with this growth, a booster application of fertilizer is recommended when the flower head begins to appear. In some cases the stem may need to be staked or somehow supported as the seed head becomes heavier and begins to bend to the ground. Winds also pose a threat of blowing over tall, top-heavy sunflowers.

While a native plant is often more susceptible to pests in its homeland, the sunflower has few enemies to contend with. Most common are the stem borer and stem maggot, rust and powdery mildew. The stem borer and stem maggot can both be quite destructive as they burrow into the stem killing all vegetation above the point of entry. Clean garden practices are the best prevention.

CHILDREN'S GARDENING

The easy to grow sunflower can be a child's first exploration into the world of gardening. Parents or grandparents, use your garden knowledge to share the thrill of accomplishment with your children. Sunflowers are perfect for children as the large seeds can be easily handled by small fingers and the plants grow quickly. A game can be played, measuring the growth of the plant to your child; first the plant is ankle high, then to the knees and soon reaches the child's shoulder. Share the responsibility of nurturing by watering the plants together.

The simple act of growing a sunflower can impart a sense of wonder for the green world surrounding us as the stalk seems to take on giant proportions. The seed head is the child's ultimate reward. With glowing pride your child will say, "I grew it myself!" Sow seeds with your children and observe their awe as they watch the miracle of life and growth from one small seed.

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Peggy Richards of National City proudly displays her giant sunflowers.

Photo by Wilbur Glover

THE ULTIMATE BIRD FOOD

With over 60 million Americans spending more than 1/2 billion dollars a year on birdseed, it would be safe to say that birds are welcome visitors to our yards, balconies and patios. There is no ideal seed mix for all birds but scientists who study the habits of birds have found that the black striped sunflower seed is the closest to an ideal, all-purpose songbird food. A feeder stocked with black striped sunflower seed will attract mourning doves, nuthatches, cardinals, grosbeaks, and finches not to mention jays, grackles, squirrels and other mischievous critters.

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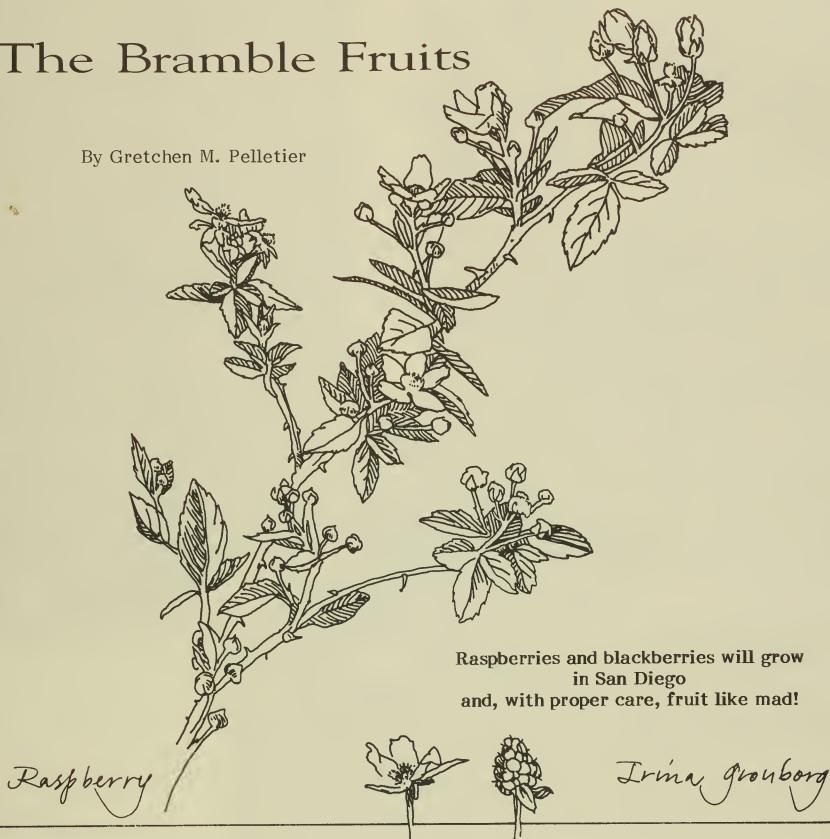


Photographs by Wilbur Glover

**Everyone
Can
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The Bramble Fruits

By Gretchen M. Pelletier



Raspberries and blackberries will grow
in San Diego
and, with proper care, fruit like mad!

Last March a San Diego couple brought home four boysenberry plants with the thought of not only covering a small white fence, but also of enjoying fruit that costs at least \$2 a pint in San Diego, when you can find it. (They also bought a carton of Haagen Daz, because there were several blossoms on the plants and they wanted to be ready for the big harvest.)

Most of us don't think of Mediterranean-clime San Diego as a habitat for raspberries and blackberries, but new low-chill (meaning: they don't need as many low-temperature days and nights to bear fruit) varieties of bramble fruits are being developed for climates like ours every year. And more nurseries are stocking them, in bare root form in winter, in containers the rest of the year.

June, in fact, is a good month for selecting berry plants because many of them are fruiting — you'll be able to test-taste them. Since the

plants' first year isn't overly fruitful (as the couple learned, eating their ice cream with three berries each), you'll be that much closer to next year's crops than if you'd started with bare root plants in January.

Fruit isn't the only objective, though. Cared for in much the same manner as rose bushes, raspberries and blackberries (edible members of the genus *Rubus*) are a delicious reminder of spring, when new shoots appear on the woody canes. (In our often "evergreen" home landscapes, it's nice to have a plan that changes with the seasons.) Soon small white flowers appear along the canes which you've perhaps trained to twist around a fence, and weeks later a blanket of white petals covers the ground as the green fruit takes shape.

Visit a nearby nursery to see which varieties of each grow particularly well in your area. We stopped at several — from Vista to Lemon Grove — and found that bramble fruits are more common

than even we thought...

Raspberries

The raspberry is a deciduous shrub, with perennial roots and biennial canes that bear summer fruit the second year. Some varieties are called everbearing — while some like 'Bababerry' (thorny) actually only bear a spring and a later fall crop, the 'Oregon' 10-30 (thorny) will continually fruit on the current year's canes from spring to late fall. Both do exceptionally well in San Diego, the 'Bababerry' is particularly heat resistant. Both produce red fruit. There are also black, purple, and yellow raspberry varieties throughout the U.S.

Raspberries can be grown in all areas of San Diego County, if given a sunny spot (light shade is alright in hotter inland areas) with good drainage and lots of water. And there lies the key: **lots of water**. A thick layer of mulch after the plants are established — manure mixed with shredded bark, composted leaves, or partially decomposed sawdust — helps keep moisture in and provides a constant supply of essential nutrients. Mulching also keeps down weeds, an advantage because hoeing around any berries can damage their shallow root systems. Do keep weeds under control — they may be robbing your plant of nutrients, and you of future pies and jam.

When transplanting into the ground, prepare the soil first by digging a large hole and backfilling it with a mixture of soil and rich compost or slow-release 10-10-10 fertilizer; plant so that the soil comes up an inch or so higher on the plant than it was in the pot. If bare root, soak the roots for an hour before planting. Since raspberries reproduce by suckering along their long roots, plant 3 feet apart in rows 7 feet apart. Water heavily right away so that the soil will settle and no air pockets form around the roots. Soon, volunteers will appear; thin out any that aren't growing along your planned route, because they're known to take over a garden in no time. Some sort of support; a fence, trellis, or two posts with wire strung between them — will be necessary to keep canes off the ground once they've reached 4 to 5 feet long. Cleaner fruit means less handling and washing of the fragile berries before eating.

Once established, care is easy. While mature canes are producing fruit, new shoots are sprouting — some of them several inches away — which will bear next year's crop. In spring, remove all but 8 to 12 closely spaced, strong canes near the original crown (where stem and root meet); remove those growing on the crown. In spring, these canes should be cut to about 5 feet; fruit will appear on lateral stems. The older canes should be cut out as soon as the fruit has been harvested to prevent disease, except in the case of "everbearing" raspberries which will produce their spring crop at the ends of the canes; their fall crop near the base. Cut ends off after the first fruiting. Keep removing spent canes for a neater garden and a stronger plant.

Viruses, for which the only cure is removal of the sick plant, include leaf curl (new leaves

curl down and inward), mosaic (marbled or mottled yellowish-green leaves), and orange rust (bright orange spores on the underside of leaves). Other diseases include anthracnose (grey blotches with purple edges on the bark), spray with Captan; root crown gall (fleshy growth on roots) no real cure except not to replant in the same area, and verticillium wilt (a sudden wilting of the canes in midsummer) the plant, unfortunately, is unsalvageable. Red raspberries, you'll be happy to know, are particularly disease resistant.

As for pests, aphids can be treated with a strong hosing off if there's fruit on the vine (other times spray with Diazanon). The same holds for spider mites, except that Kelthane or a sulphur dust are the cures. The cane borer is evidenced by a sudden wilting of the tops of new canes where you'll see two rings. Cut off the wilted ends below the bottom ring and burn them.

Raspberries are ready to pick when they slide easily off their small white core. Place them in single layers in small containers so they won't crush. Just before eating, give them an icy water rinse.

Blackberries, or dewberries

Possibly the most popular berry of San Diego gardeners, aside from strawberries, is the 'Olallie' berry, which is actually a boysenberry, which is actually a blackberry. Which is where we'll start.

Blackberries are deciduous shrubs. Those that do well in San Diego are trailing varieties (as opposed to upright and semi-upright) called dewberries. 'Boysen' and 'Thornless Boysen' are varieties that are easy to find in local nurseries; their yields of large, dusty reddish fruit are especially heavy. 'Nectar' berries are identical to 'Boysen'. 'Olallie' berries (thorns) produce a large, shiny black, sweet fruit that fairly bursts with juice. Watch for a new blackberry variety, 'Shawnee', that will become available in our nurseries soon. **Organic Gardening** magazine rated it the best yet.

Trailing blackberries require rich soil (amend with compost or manure) with good drainage; be sure to water heavily right after planting to settle the soil. Give bare root stock a soaking before planting. Potted plants should be set 1 inch deeper into the soil than they were in the pot. Lots of sun and water are essential (though established blackberries are more drought tolerant than raspberries). Because they have long, trailing vines, they should be spaced about 8 feet apart in rows 6 to 10 feet apart. Support in the form of a fence or wires between posts is necessary for the long canes. Fertilize established plants before new growth starts, in mid-spring, and again in mid-summer.

Like raspberries, blackberries' roots are perennial, their canes biennial — fruit will appear on long, mature canes while new shoots sprouting this year will hold next year's fruit. As soon as a cane's fruit supply is exhausted, it should be

removed (but not composted — old canes can carry disease). Train the year-old canes on the trellis, thinning to 12 to 16 of the strongest-looking canes. Prune these to 7 feet or so, and keep the side branches that will appear to about 12 inches. New plants will root if the tips of the canes touch ground. And watch for suckers! Trailing blackberries are very, very invasive.

Pests and diseases are much the same as those of their red cousins. If you can't quite diagnose the problem, a cutting brought to your nurserymen is always the surest bet.

The brambles available in San Diego nurseries now are well established, first-year plants that, by next summer, may give you a whole pie's worth of fruit. Or at least the best bowlful of ice cream you've ever tasted.

Gretchen Pelletier is an associate editor of San Diego Home/Garden.

In Volume 78,
Issue No. 4,
Page 106
"Beware the
Fuchsia Mite"
was written by
Kathy Gilberd
vice
Kathy Gilbred.
We regret the error in spelling.



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How to grow



A California Avocado House Plant



By California Avocado Commission

1. Wash seed, remove pulp. Suspend seed (broad end down) over water-filled glass with 3 toothpicks. Water should cover $\frac{1}{2}$ " of seed.

2. Place in warm location — out of direct sunlight. Seed will crack as roots and stem form (2 to 6 weeks).

3. When main stem is 6" to 7", cut back to about 3". When roots are thick and stem has leafed, plant in terra cotta pot.

4. Plant in rich humus type soil. Use pot with $10\frac{1}{2}$ " diameter. Leave seed half exposed. Keep plant moist.

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Scotch Heather

Garden News Release

Scotch heather is the floral emblem of Scotland as it's found growing everywhere, and in the fall you'll see acres and acres of moorland and mountainsides decorated with its rosy-lavender display of flowers. Scotch heather is known botanically as *Calluna vulgaris* and the plants it is most often confused with are the heaths of the *Erica* genus. Both belong to the same family, though.

The botanical name *Calluna* derives from the Greek word *kallunein* meaning to sweep. This also refers to the facts that heather was used in making brooms and where it is found growing all over, especially some European countries, it is used for thatching. For use in our state, you will find that Scotch heather is an evergreen shrub growing from six inches to three feet tall. The flowers are about 1/8 inch in length and usually a purplish pink.

There are many varieties of heather, and although we cannot describe all of them, here are some to consider such as *C.v. alba* which is a white flowering heather and said by the Scots to be a symbol of good luck. There is also a dwarf white heather with double white blooms, a low growing heather with yellow tinged foliage, another dwarf that spreads on the ground and has double lilac flowers, one with yellow young shoots that become reddish-bronze in the winter, a heather that is extremely dwarf adorned with bright green foliage and rosy-purple flowers and a tall, white flowering heather. 'H.E. Beale' has long spikes of bright pink double blooms while 'J.H. Hamilton' has large pink blooms and is dwarf. 'Mrs. Pat' has foliage that is light pink in spring highlighted with rosy-purple flowers.

Scotch heather can be planted alone or along with hardy heaths and plants of the *Cytisus* genus better known as brooms. The heathers themselves are used as groundcovers, as a small shrub in front of larger ones or in a rock garden. The only places that Scotch heather does not do well in are those that have hot, hot summers or more drought type conditions. They do well by the ocean, though.

For heather to be happy in your yard, the soil should be slightly acid and skimpy on nutrients. The latter is said because if planted in an overly rich soil, heather has lush growth that is apt to die in the winter. It can grow in a location that has shade part of the day and is definitely not a plant to consider for a stuffy, dark corner. Heathers respond in airs with good air circulation around the plant. One last bonus is that their flowers are great for cutting and for drying for use in flower arrangements.

WHAT A COLOR SHOW!

Crape Myrtles

By California Association of Nurserymen

When it seems so hot that not a thing will bloom or if it does, will not hold up under the heat, the faithful crape (pronounced crepe) myrtle comes through. This colorful shrub or small tree blooms from July through September in the hottest spot you can find. Its crepe-paper-like flowers come in large clusters on the ends of its branches and you'll also see smaller clusters down the branch. The colors are as bright as the sun in shades of reds, pinks, purples and whites. The bark, itself, is a glossy grey that peels a little to show an almost pink coloring underneath.

While this plant can be grown in almost any climate, it does produce more blooms in a hot, dry climate. It can be adversely affected with mildew if in a cool or high humidity location. Mildew easily can be controlled, though, with the proper use of a spray before the plant blooms.

One frequently finds this as a street tree in a small cement cutout like a driveway strip. In spite of the location and the lack of water, it will be absolutely covered with blooms. The secret to success is easy enough to learn. Like most drought tolerant plants, the crape myrtle needs a normal amount of watering during its first year in your garden. Then you can begin to cut back as to the frequency of watering but not the amount of water given. It is very important to give this plant and others like it a very deep watering when you do irrigate. If you happen to have an alkaline soil or the common alkaline water of southern California, a good leaching of the salts with thorough watering and an occasional application of iron during the growing months will help offset leaf burn and chlorosis.

There are many varieties of crape myrtle on the market today. A very compact grower has been introduced as a hanging basket plant or type of very low growing shrub. There are some that are less prone to mildew in the damper areas of the state. These go by the names of various Indian tribes — Catawba (dark purple blooms), Cherokee (bright red), Potomac and Seminole (shades of pink), and Powhatan (light lavender).

The leaves on crape myrtle can turn bright yellow to and including orange and very deep red in the fall and the weather is what affects the color change. On your next visit to the nursery, check out crape myrtles and be sure to search out 'Peppermint Lace' which is a fairly recent development that has pink flowers trimmed in white.

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The Mini-Farm at Desert Botanical Garden

Horticulturist and Training Coordinator:

Suzanne Nelson

Research Coordinator: Gary P. Nabhan, Ph.D.

Native American Summer Intern: Culver Cassa

A recently-received grant from the Jessie Smith Noyes Foundation has enabled the Desert Botanical Garden to reinitiate its mini-farm of economic plants from arid zones. Following the objective set by its creator, Dr. Howard Scott Gentry, the mini-farm will be used to demonstrate desert crop options to those interested in small farm development in the arid southwest and adjacent Mexico. Over the next year, trainees and interns from Mexican and Native American communities in the Sonoran and Chihuahuan deserts will visit the site to learn how to integrate desert plants into "conservation farming". These visits will be coordinated with desert projects in Mexico funded by the U.S. Forest Service. One training workshop on "Selection, Evaluation and Propagation of Native Crops for Arid Zones" was held in May. Twenty-four participants from 9 states in three countries attended.

Several kinds of plantings will demonstrate different approaches to conserving agricultural resources adapted to dry lands. First, the germplasm nursery of perennial shrubs, tubers and vines begun by Dr. Gentry will be extended to include about 15 - 20 species. These will include foods, spices, natural insecticide and industrial crops whose genetic resources need to be conserved and evaluated.

The second component will be the intercropping of drought-adapted annuals, namely tepary beans, grain amaranths and sorghum. Experiments will focus on the effects of water and nitrogen stress on the physiological responses and yields of intercrops and their component species. Other plantings will evaluate the effects of nitrogen stress and herbivory on similar intercrops. Dr. Rob Robichaux of the University of Arizona has helped design and implement these experiments.

A third experiment design will allow us to investigate overcropping of desert perennial crops. Wild perennial chiles are being grown by themselves, and in the shadows of hackberries and mesquites. All treatments are replicated, and are established in microcatchments to capture storm runoff. We hope to document the benefits of the overstory "nurses" to the more sensitive chiles.

Wild gourds will be planted on field margins for several purposes. Josh Kohn of the University of Pennsylvania has provided us with hand-pollinated buffalogourds that will help determine the inheritance of sex type, as part of the evolution of sexual reproduction strategies. Buffalogourds will also be evaluated as a trap crop for insects. Other hybrid gourds of various parent species

will also be evaluated as oil seeds and trap crops, and in taxonomic/ecological studies of these desert plants.

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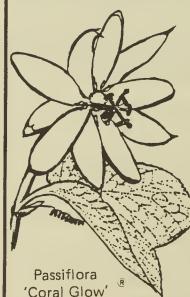
Next, a desert tree crop nursery will be planted as a shelterbelt bordering on McDowell Road. It will include quick-growing legumes and other trees for wood and seed increase, watered with supplemental storm runoff. An agave-prickly pear hedge will border the margins of the mini-farm. Finally, a permaculture design of edible landscape plants will punctuate the entranceway.

Weeklong workshops and Saturday "field days" will be held at the mini-farm. The next workshop will be from October 8-11, and will focus on desert genetic resources conservation and intercropping designs. It will be followed the next week by a U.S./Mexico symposium in Tucson, "Strategies for Classification and Management of Native Vegetation for Food Production in Arid Zones", where both Wendy Hodgson and Gary Nabhan will be giving presentations for the Desert Botanical Garden. If a research proposal currently under consideration is accepted, the mini-farm will also be used as a site for two field days called "Desert Plants and Conservation Farming", for which Arizona farmers and gardeners will be invited to participate.

The Desert Botanical Garden is located at 1201 N. Galvin Parkway, Phoenix, Arizona 85008; telephone (602) 941-1225.

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Book Reviews

By Mary Lou Orphey

THE BULB BOOK, a Photographic Guide to Over 800 Hardy Bulbs by Martyn Rix and Roger Phillips. 1983. First published in 1981 by Pan Books Ltd., Cavaye Place, London, SW10 9PG. 8 ½ x 11 ½. 192 pages. Paperback.

Since most hardy bulbs come from areas with a Mediterranean climate — cool wet winters and hot dry summers — coastal Southern California is particularly suited to their cultivation. Of the eight hundred bulbs photographed here, most will withstand cold snowy winters. Many bulbs are photographed in their native habitat. Photographed while in bloom, each bulb is dated and shown in scale with their root structure showing. Bulbs not included are Begonias, Dahlias, most Gladioli and Orchids.

Many gardeners from cold climates fondly remember crocus poking their pretty heads from beneath the snow, their promise of the coming spring giving a needed boost to weather out the remaining winter; and later, tulips and daffodils cheering hearts with their bright happy colors. For such reasons, bulbs continue to grow in popularity. This book will enable enthusiastic gardeners to have blooming bulbs year round.

EVERLASTING DESIGN, More Ideas and Techniques for Dried Flowers by Diana Penzner with Mary Forsell. 1987 Facts on File Publications, 460 Park Avenue South, New York, 10016. 8 ½ x 8 ½ in. 144 pages. Hardcover.

Dried flowers and greens last longer than fresh flowers and can be used over again in different ways. In this colorful book, one learns the basics about work space and storage, appropriate containers, what tools and materials are needed, and what plants to grow for use in dried arrangements. There are examples of step-by-step arrangements. Follow the directions and make an autumn gourd basket, holiday designs, or an attractive traditional arrangement.

One also learns the art of pressing flowers for use in picture arrangements. There are recipes for potpourri. Directions for making herb garlands and wreaths are concise and easy to follow. In the catalogue on more everlasting, numerous examples of materials for drying are illustrated and directions given for their use.

Anyone interested in dried or pressed flowers, potpourri, wreaths, or herb garlands will enjoy this informative book on everlasting.

POISONOUS PLANTS OF CALIFORNIA BY Thomas C. Fuller and Elizabeth McClintock. 1987. University of California Pres, 2120 Berkeley Way, California 94720. 5 x 8 ¼ in. 433 pages. Hardcover. \$25.00.

Reading this book on poisonous plants of California is downright discouraging. Many people know that Oleanders, Poinsettia, Daffodils, Tulips, and Crocus are poisonous. However, just to name a few others included in this book: Oregon Grape, Trailing African Daisy, Chamomile, Agapanthus (rhizome, leaves), Onion, Lantana, Pittosporum (including Mock Orange and Victorian Box), California Poppy, Privet (clippings of any privet should be kept away from children and livestock), Wisteria, and Coral Trees. Toxic parts of the plant are described, the toxin is identified, and the symptoms described. For example, anyone allergic to ragweed pollen may have symptoms of inflammation of the nasal membranes or go into anaphylactic shock if they drink chamomile tea.

This book belongs in the library of gardeners, parents, farmers and others concerned about poisonous plants. And, don't forget — many of these plants grow in other states and countries.

An Introduction to the CULTIVATED ANGRAECOID ORCHIDS of Madagascar by Fred E. Hillerman and Arthur W. Holst. 1986. Timber Press, 9999 SW Wilshire, Portland, Oregon. Exclusively distributed by ISBS, Inc., 5602 NE Hassalo Street, Portland OR 97213. 8 ½ x 11 ½ in. 302 pages. Hardcover. \$32.95.

An impressive, extensive in-depth study of the Angraecoid orchid unique to Madagascar, this book provides background information for orchid lovers interested in these unique plants.

One learns about the people of Madagascar, their language, history, about various orchid explorations from the sixteenth century onwards, and also about the physical environment, geographic and climatic zones of Madagascar.

Information on the culture of Angraecoid orchids is included. Angraecoid orchids have leaves which are "evergreen, often fleshy, and most are unequally bilobed at the tip. The plants are mostly epiphytic, occasionally lithophytic or terrestrial. They have no pseudobulbs, and are monopodial. The flowers are white, greenish-white, green, pinkish white, brownish white, brown, or yellowish. They are often waxy in appearance, and the entire alliance is characterized by a typical star-like flower shape, with a conspicuous lip and spur. Most of them are nearly odorless during the daytime, but at night they release a variety of tantalizing aromas."

Individual chapters are devoted to genus. For each species; origin of the name, description based on the author's plants, natural habitat and culture are included. Where possible, illustrations and color photographs are used.

PONDS AND WATER GARDENS, Revised Second Edition, by Bill Heritage. 1986. Blandford Press, Link House, West Street, Poole, Dorset BH15 1LL. Distributed in U.S. by Sterling Publishing Co., Inc. Two Park Avenue, New York 10016. 5½ x 7½ in. 170 pages. paperback. \$8.95. (\$12.95 Canada).

This is a practical book on how to construct water gardens. It answers practically any question one might have about site, diameter, depth, configuration, construction materials and building, use of plants and livestock.

The author is keen on placing ponds and water gardens in areas with at least five hours of sunshine. Anyone who enjoys water lilies, water iris and marsh marigolds will find the book helpful in transforming a part of their yard into a delightful water garden.

FIRST NATIONAL HERB GROWING AND MARKETING CONFERENCE, Edited by James E. Simon and Lois Grant, Department of Horticulture, Purdue University. Published in 1987 by Purdue University, West Lafayette, IN 47907. Agricultural Experiment Station Bulletin No. 518. 8½ x 11 in. 333 pages. Paperback.

Those who grow herbs for profit or pleasure will benefit from reading the papers presented at this conference on the commercial production of herbs.

A few aspects covered were: How to Start an Herb Business, Greenhouse Production of Herbs, Developing Herbs as Cash Crops in the USA, Post-harvest Handling of Fresh Culinary Herbs, Crafting with Herbs, How to Make a Better Potpourri, and Reflections of the American Spice Industry.

LANNING ROPER and His Gardens, by Jane Brown. Published in US in 1987 by Rizzoli International Publications, Inc., 597 Fifth Avenue, New York 10017 9½ x 11½ in. 224 pages. Hardcover.

Lanning Roper was an American who became a noted garden journalist and consultant in England from the mid-fifties until his death in 1983.

Just as a rose bud unfolds its petals to show its beauty, so did Lanning Roper bloom on British soil. Jane Brown's biography of this talented man explores all avenues of his life, from his decision at age 34 to learn about English gardens, to the twilight of his years gardening and consulting for the National Trust and royalty. Complete with splendid photographs and diagrams, it is indeed a delightful book.

THE ART OF CHINA, by Chen Lifang and Yu Sianglin. 1986. Published by Timber Press, Portland, OR. Exclusive distributor is ISBS, Inc., 5602 N.E. Hassalo St., Portland, OR 97213. 8 1/2" x 11". Hardcover. \$27.95. 221 pages.

This is not one of those vague books in which broad, asthetic statements concerning garden pictures are made. It is truly a guide to the elements and landscape features of traditional Chinese gardens. The four fine arts of China are calligraphy, drawing, music, poetry, and gardening and landscape design. Garden cultural symbols are described and explained. Chinese landscape terms are translated and sketches are used to further clarify the terms. There are numerous pictures, sketches, and lists of traditional plant material.

Chen Lifang, the author, is a landscape architect and garden historian in China; Yu Sianglin, the translator, is a botanist at the Canton Botanic Garden, China.

This book is a delight to read and should be of value to anyone interested in Chinese culture and art, as well as to those interested in garden design. It would be a wonderful reference to have while traveling in China. It is a beautiful book, too. It's at the top of my Christmas 'Wish list'.

Reviewed by Barbara S. Jones

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THE ORGANIC GARDEN BOOK, by Geoff Hamilton 1987. Published by Crown Publishers, Inc., 225 Park Avenue South, New York, New York 1003. 8"x12", Hardcover. \$27.50. 288 pages.

Are you really interested in "getting all the bugs out of your garden" and accomplishing this task without the use of environmentally dangerous methods?

If the answer is "Yes," then this book is for you! Trendiness aside, more and more gardeners are discovering that it is possible, and not all that difficult, to create gardens safe for pets, children and other people!

The author, trained as a horticulturist and landscape architect, and presently host of the successful BBC series, "Gardeners' World," sets out clearly, step by step, the basic principles of organic gardening. He describes ways to enhance the texture and fertility of the soil organically, and ways to create a natural means of pest control, as well as a balance between healthy vegetation and helpful predators.

There are hundreds of beautiful, and informative pictures in color, which make this a delightful visual experience. But, more than a beautiful book, this is one that really, "says it all," so far as gardening organically is concerned. Every type of garden is involved — herbs,

vegetables, fruit, flowers and shrubs! An added plus is the guide to American climatic zones as well as a directory of suppliers and organizations. Consider this book for a special gift — for yourself and friends!

Reviewed by Marian Lemen Sandy,

FLOWERS OF SOUTHERN AFRICA, by Auriol Batten. 1986. Published by Frandsen Publishers, Ltd., P.O. Box 122, 2055 Fourways, South Africa. 12 3/4" x 9 3/4". Hardcover. \$93.00. 432 pages.

Gorgeous is the only way to describe this magnificent book of watercolor botanical prints of the wild flowers of South Africa. It is a limited edition; ours is #896. The artist is also a botanist.

Each full page painting shows the flower in accurate detail with a black and white sketch of the typical form and habitat of the whole plant. A concise, descriptive page accompanies every drawing giving the botanical name, habitat, flowering season, details about size and texture, discovery and naming information, propagation, etc.

As most South African plants can be grown in southern California, this book will be of special interest.

Reviewed by Barbara S. Jones

Arboretum's Flowering Trees Hit The Road

Flowering trees from the Los Angeles State and County Arboretum have taken to the road, or in the case this spring, the freeways and a boulevard. In two recent projects, the Arboretum donated a total of about 250 flowering trees to agencies that beautify public thoroughfares.

As part of its "Eastern Gateway Project," the city of Pasadena and Pasadena Beautiful Inc. planted 90 trees donated by the Arboretum last month. The nucleus of a flowering forest in the median island of Sierra Madre Boulevard now stretches about a mile westward from the Michilinda Avenue intersection.

Another 150 trees from the Arboretum were planted along the Foothill and 605 freeways by the California Department of Transportation in February.

In both projects the trees were colorful exotic species well adapted to local growing conditions. Donated trees, all about 6 feet tall, include floss silk trees, coral trees, both pink and yellow trumpet trees, red silk-cotton trees, weeping bottlebrush trees, and gold medallion trees.

"We hope that these colorful trees from differ-

ent parts of the world will form a network of Trees International throughout the Southern California freeway system," said Francis Ching, director of the Department of Arboreta and Botanic Gardens.

Caltrans and the Arboretum have a history of cooperating in landscaping local freeways.

When the Foothill Freeway was dedicated 15 years ago, the Arboretum donated many floss silk trees. Since then these South American natives have become freeway landmarks with their bulging, thorn-studded trunks and masses of bright pink flowers in the fall.

Purpose of the planting projects is to bring beautiful plants out of the Arboretum into public places where thousands of travelers can enjoy the flowers every day. Specific trees are chosen because they grow and bloom with little water during the dry summer months.

Since the trees flower in different seasons, their blossoms remind people year around of the work that goes on behind the scenes at gardens operated by Los Angeles County.

NOW IS THE TIME...

A CULTURAL CALENDAR OF CARE FROM OUR AFFILIATES
Compiled by Penny Bunker



BEGONIAS Margaret Lee

take cuttings to increase your collection, or to share.
feed tuberous begonias in September as long as leaves remain green.
give a final feeding of the year in October unless you gave feed all year around with a balanced fertilizer.
start withholding water from the tuberous in October, and of course, do not feed them again.

BONSAI Dr. Herbert Markowitz

adjust watering schedule to variable weather.
Shallow pots may require two or three daily waterings on hot, dry, windy days.
transplant wisteria if you want blossoms next spring.
repot quince, olives, and podocarpus.
move deciduous trees to cool, shaded areas if you live in Southern California, so they will not sprout new growth.
fertilize only lightly or not at all in October, if you fertilized in September.
wait until spring for any major transplanting.

BROMELIADS Mary Siemers

maintain regular watering program until the weather turns cooler.
continue fertilizing throughout the warm weather.
remember to pot pups now while weather is still warm.
cut pups that are at least one-third the size of the mother plant.
keep plants groomed by cutting dead blooms and discolored leaves.
repot to next larger pot-size, if necessary.
check for scale, snails, and slugs.

CACTI & SUCCULENTS Richard Latimer

keep moisture level high, if dry, hot winds occur, but otherwise start hardening plants.
repot rootbound plants.
feed with low nitrogen fertilizer.
check for insect pests, and act accordingly.
look for scale. Use alcohol to eliminate this pest, either full strength, or dab with cotton swabs.
divide overgrown plants, and propagate new

growth to increase your collection and/or share with friends.

let summer-active succulents become dormant around October 1st.

CAMELLIAS E.C. (Gene) Snooks

maintain a regular watering program during bud development.
spray for bud mites or spider mites with kelthane or similar miticide.
start or continue to disbud for better blooms, leaving one bud per cluster or one bud per branch for show quality blooms.
fertilize with 0-10-10, 2-10-10, or similar low nitrogen fertilizer for best bloom development.
apply supplemental iron and zinc, if indicated by pale foliage with darker green veins.
apply gibberellic acid for earlier blooms. Buds should open in about two months.
prepare for possible Santa-Ana winds with portable wind-breaks. Also wet the areas several times per day during the Santa-Ana, and spray the leaves.

DAHLIAS Abe Janzen

spray to prevent mildew and spider mites.
maintain a regular watering program until first of October, then cut down gradually.
feed with potash to promote good root growth. Also, it helps them to keep better during the winter.
clean up old leaves and stalks, preparing for fall and winter storage.

EPIPHYLLUMS Frank Granatowski

maintain good grooming of your plants by removing dead, non-productive and unsightly branches, thus conserving energy for the remainder of the plant. The healthy branches will produce stronger blooms next spring.
protect plants from exposure to direct sunlight.
prevent soil from completely drying out.

An occasional misting or spraying of foliage can be beneficial.

protect new growth from wind damage.
bait for snails and slugs. A few granules of 'Slugetta' at the base of the plant is very effective deterrent and leaves little or no residue.

practice preventive maintenance regarding insect control. Use insecticide such as Malathion or Orthene only if absolutely necessary. Be sure to read and follow instructions on labels.

give plants a final feeding for fall using a balanced fertilizer before they become semi-dormant.

FERNS Ray Sodomka

water and maintain humidity by keeping the surrounding areas damp. Beware of hot, dry winds.
plant spore of all varieties.

fertilize plants regularly with a high-nitrogen formula.
avoid direct sun, but give maximum light.
 Maintain temperature of 70° to 78°F.
trim off dead fronds.
check for aphids, mealybugs, and scale; may use malathion.
control snails, pillbugs, and slugs with metaldehyde granules.
repot house ferns to next size pot if overcrowded.

FUCHSIAS William Selby

spray as required for insect control. Be sure to wet the underside of leaves, the hiding place for egg laying insects.
continue fertilizing for winter bloom.
pick off spent blooms and seed pods.
maintain humidity by keeping areas sprayed. Be careful not to overwater, but may mist during hot, dry windy days. Best to water early morning, or cool of the evening.
make cuttings while cutting back leggy growth; use the tender tips. October is the better month to propagate new plants.
keep plants and containers clean.

GERANIUMS Carol Roller

water thoroughly when plants become somewhat dry. Allow the excess water to drain away.
continue feeding with a balanced fertilizer dissolved in water, using less than the recommended amount as often as needed to keep the plants growing well.
continue a pest control and disease prevention program, using all products according to the manufacturer's directions.
begin pruning. On regals, scented, and similar types, at least one green leaf should be left on each stem being cut back.
make cuttings from the prunings. Shelter cuttings from extreme weather.
keep all the plants tidy by removing faded flowers and discolored leaves.
continue to rotate plants on a regular basis in order to keep well-shaped.

GESNERIADS Mike Ludwig

protect plants from the damaging rays of the sun.
control red spider mites using a spray like kelthane to destroy them.
sterilize greenhouse to ready it for plants that you might bring in.
give less food to keep tender growth arrested until after winter cold.
maintain a watering program during dry hot weather. It may mean more watering.
check and control pests. Be sure to check new plants you may obtain, and those you may bring from outdoors, so you do not spread disease and pests to your indoor plants.

IRIS San Diego-Imperial Co. Iris Society
clean up beds and discard old fans and debris.
plant beardless iris: spurias, Siberians, Louisianas, and Japanese varieties. Keep moist until well established. Louisianas and Japanese are grown in pots, in pools, or in swampy conditions.
divide and plant bearded iris.
feed established tall-bearded that are not being divided.
control slugs and snails.
plant Dutch bulbous in October for spring bloom.

ORCHIDS Charlie Fouquette

begin low-nitrogen, high phosphate, high potash feeding for cymbidiums.
feed phalaenopsis a 3-1-2 solution.
watch for slugs and snails on stalks and sheaths of orchids that should be in bud or flower.
keep phalaenopsis moist and out of direct or intense sunlight.
check for scale or other insects that like it drier, and spray accordingly.
check heater controls, pilot lights, flues, and vents, for no spider webs, or buildup in flues or smoke-stack -- check before needed.
clean greenhouse glass.
spray and mist on Santa-Ana days.
clean, de-scale and replace fiber pads, when you finish using a swamp cooler on wet-pad for the year. Oil motor and pump, remove water from reservoir, and patch any leaks using roof-repair bitumastic non-setting type.

ROSES Frank Hastings

feed with a balanced fertilizer; water the day before fertilizing; water in the dry fertilizer.
feed 3 tablespoons of liquid fish per gallon of water per bush, two weeks after feeding dry fertilizer.
feed liquid iron the first week in September.
wash off spider mites with a jet stream of water under leaves weekly.
spray weekly for pest control; water well day before spraying. Use a mixture of Orthene and funginex as per instructions.
disbud for one bloom per stem on Hybrid Teas and Grandifloras.
water at least twice a week unless 3/4 inch of rain falls in one week.

VEGETABLES

make first plantings of cool weather vegetables for winter by setting started plants of cabbage and its relatives, and celery.
plant seeds of mustard, peas, lettuce, and root vegetables.
water deeply, as needed, instead of frequent light sprinkling -- this will save both water and labor.

harvest vegetables now bearing heavily, so they are in prime condition when used, and the bushes and vines are encouraged to bear longer.

fertilize as needed, so that plants grow vigorously and bear larger and more succulent edible parts.

GREEN THUMB

prepare bulb beds with humus and start looking for bulbs in nurseries. It is a little early to plant bulbs, but place in refrigerator for a few weeks before planting.

dust and stake chrysanthemums, but do not pinch tips any more; disbud for larger blooms on those varieties.

divide Shasta daisies and transplant belladonna lilies after blooming.

mulch acid-loving plants using peat moss or ground bark.

plant some spring flowers, calendulas, cinerarias, Iceland poppies, snapdragons, pansies.

plant in October watsonias, scillas, jonquils, and some daffodils.

feed well established shrubs with a balanced fertilizer; water thoroughly.

Geraniums From Seed

By Charles F. Heidgen,

For best results when growing hybrid geraniums, follow the culture given here. However, if you have a different way that works, don't argue with success.

Germination

Sow seeds $\frac{1}{4}$ inch apart in the row, $1\frac{1}{2}$ to 2 inches between rows. Cover seed slightly with sowing medium.

Soil temperature is critical. This is where the success or failure of seed geraniums is generally judged. A 75° F soil temperature must be maintained. A soil thermometer at seed level in the sowing flat is best.

Maintaining uniform moisture during germination is very important. Mist watering is best.

Germination is normally rapid. A high percentage should germinate within seven to ten days. Wide temperature changes will delay germination. Not all varieties will germinate at the same rate.

After germination, optimum growth and earlier blooming is obtained by providing supplementary light. Fluorescent lights hung 12 to 18 inches above the young seedlings and lit for 16 hours of every day reduce "stretch" and promote earlier blooming. After germination, seedlings should be grown at 62° F night temperature.

Transplant the seedlings when the first set of true leaves appears, usually within two weeks. They should be planted to the crown (where stem meets roots) in a well-drained soil mix in $2\frac{1}{4}$ -inch pots.

A fungicide drench should be applied after transplanting to reduce the chance of damp-off. Benlate® and Captan® are two excellent fungicides for this use. Follow label directions.

When established in the $2\frac{1}{4}$ -inch pot, light feeding with a balanced complete water soluble fertilizer, for example 20-20-20, can begin. Before crowding occurs, shift the $2\frac{1}{4}$ -inch plant into a

larger container, for example a 4 inch to 6 inch pot, being certain to use a well drained soil mix. Use the fungicide drench each time you shift to a larger container.

Continue feeding with the water soluble fertilizer to obtain the maximum size plant in the minimum amount of time.

Light, especially sunlight, is the best material to use to produce large bushy plants. Providing artificial supplemental light, as mentioned above, will aid in earlier blooming, but maximum sunlight is most important for optimum growth.

Charles F. Heidgen has a greenhouse nursery called Shady Hill Gardens in Batavia, Illinois.



SAN DIEGO FLORAL ASSOCIATION & GARDEN CENTER

Under the sponsorship of the Park & Recreation Department, City of San Diego
 Meetings: 3rd Tuesday, February, April, June, October — Casa del Prado, Balboa Park, San Diego, California

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AFFILIATE MEMBERS

ALFRED D. ROBINSON BRANCH AMERICAN BEGONIA SOCIETY

Pres: Hazel Jacob 276-4434
 2035 Illion
 San Diego, CA 92110
 2nd Tues, Home of Members, 10:30 a.m.

AMERICAN BAMBOO SOCIETY

Pres: Mr. Richard A. Haubrich 481-9869
 1101 San Leon Court
 Solana Beach, CA 92076

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 1852 31st Street
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 (516) 742-3890
 159 Pine Street
 New Hyde Park, NY 11040

AMERICAN HIBISCUS SOCIETY

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 33 Via de la Reina
 Bonnall, CA 92003

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BALBOA PARK AFRICAN VIOLET SOCIETY

Pres: Mrs. Barbara Wallace 298-7870
 1075 Hayes Ave
 San Diego, CA 92103

BALBOA PARK BROMELIAD STUDY GROUP

Pres: Mr. Thurlio Schindler 481-9302
 648 Marsolan Avenue
 Solana Beach, CA 92075
 2nd Tues, Rm. 104, Casa del Prado,
 7:30 p.m.

BERNARDO GARDENER'S CLUB

Pres: Mrs. F. Neal Fugate 485-8278
 17888 Via Altiva
 San Diego, CA 92128

CALIFORNIA ASSOCIATION OF NURSERYMEN SAN DIEGO CHAPTER

Pres: Judy Hart 445-0445
 920 Harbor Canyon Road
 El Cajon, CA 92021

CALIFORNIA NATIVE PLANT SOCIETY

Pres: Joan Stewart 277-9485
 4906 Mt. Almagosa
 San Diego, CA 92111
 3rd Tues, Casa del Prado, 7:30 p.m.

CHULA VISTA GARDEN CLUB

Pres: Mrs. William Morrissey 426-3930
 244 East Naples Street
 Chula Vista, CA 92011
 3rd Wed., Rohr Park Manor, Sweetwater Rd.
 Bonita, 1:00 p.m.

CITY BEAUTIFUL OF SAN DIEGO, INC.

Pres: Mrs. Ruth C. Smith 488-0830
 4995 Fanuel Street
 San Diego, CA 92109
 1st Mon. S.D. Zoo, Rondavel Rm., 11:30 a.m.

CONVAIR GARDEN CLUB

Pres: Mrs. Virginia Soderberg 582-7098
 6197 Arion Drive
 San Diego, CA 92120
 1st Wed., Casa del Prado, 7:30 p.m.

CORONADO FLORAL ASSOCIATION

Pres: Barbara Perkins 435-8822
 840 Balboa
 Coronado, CA 92118
 Twice annually at call of President,
 1113 Adella Ave., Coronado, 7:30 p.m.

CROWN GARDEN CLUB, CORONADO

Mrs. John Watson (619) 435-3315
 311 Ocean Blvd.
 Coronado CA 92118
 4th Thurs., Coronado Library, 9:00 a.m.

DOS VALLES GARDEN CLUB

Mrs. Jay E. Adams (619) 749-1979
 27062 Banbury Drive
 Valley Center, CA 92082

2nd Tues. (except July and August)
 Valley Center Community Hall

Lilac Road and Valley Center Road
 Valley Center, CA 1:00 p.m.

EAST COUNTY ROSE SOCIETY

Pres: Harry Gray
 561-4182
 8124 Royal Park Lane
 El Cajon, CA 92021-2183

1st Sun., var. of gardens, 2:00 p.m.

ESCONDIDO GARDEN CLUB

Pres: Mr. Patrick Shields 724-3749
 1215 Amador Avenue
 Vista, CA 92083
 3rd Fri., Joslyn Senior Center 1:00 p.m.

EXOTIC PLANT SOCIETY

Pres: Miss Cynthia Drabek 271-8933
 11121 Saunders Court
 San Diego, CA 92131
 4th Tues., Wells Rec Center

1235 E. Madison, El Cajon, CA 7:30 p.m.

FALLBROOK GARDEN CLUB

Pres: Mrs. Walter Brendel 723-7577
 1826 Via Entrada
 Fallbrook, CA 92028

Last Thurs. each month except 3rd Thurs.
 Oct., Nov., Dec., St. Peter's Church 10 a.m.

FLEURS DE LEAGUE, LA JOLLA

Pres: Mrs. Lee Monroe 222-8199, 226-8881
 851 San Antonio Place
 San Diego, CA 92106
 2nd Mon., Home of Members, 10:30 a.m.

GROSSMONT GARDEN CLUB

Pres: Mrs. Dolores Smith 464-2457
 7443 Orien Avenue
 La Mesa, CA 92041

2nd Mon. 4975 Memorial Drive

La Mesa, CA 92041, 9:30 a.m.

HEARTLAND AFRICAN VIOLET SOCIETY

Pres: Mr. Jim Buchanan 442-7037

233 Noden Street, El Cajon, CA 92020

3rd Thurs., 7:00 p.m., Home Savings,

396 No. Magnolia St., El Cajon, CA 7:00 p.m.

HERB SOCIETY OF SAN DIEGO

Pres: Mrs. Helen Chandler 745-7713

151 Gayland No. 51

Escondido, CA 92027

2nd Sat., (Except July and August)

Home of members, 11:00 a.m.

ICHIYO SCHOOL OF IKEBANA SAN DIEGO CHAPTER

Mrs. Haruko Crawford 465-3046

10411 San Carlos Drive

Spring Valley, CA 92077

IKEBANA INTERNATIONAL CHAPTER 119

Pres: Mrs. Rex (Kay) Yarnell (619) 435-0910

501 Country Club Lane

Coronado CA 92118

4th Wed., Casa del Prado, 10:00 a.m.

IKENOBOKA CHAPTER OF SAN DIEGO

Pres: Mrs. Charles Oehler 278-5689

2822 Walker Drive

San Diego, CA 92123

INDOOR CITRUS AND RARE FRUIT SOCIETY

Pres: Walter Doty (415) 948-3171

176 Coronado Avenue

Los Altos, CA 90402

LA JOLLA GARDEN CLUB

Pres: Mrs. Robert M. Boynton 481-0263

376 Bellaire Street

Del Mar, CA 92014

3rd Tues., La Jolla Woman's Cl., 1:30 p.m.

LA MESA GARDEN CLUB

Pres: Mrs. James Pollack 444-4983

6325 Primrose Drive

La Mesa, CA 92042

3rd Thu., La Mesa Woman's Club

5220 Wilson St., La Mesa 1 p.m.

LAS JARDINERAS

Pres: Mrs. James Houck

2360 Presidio Drive

San Diego, CA 92103

3rd Mon., Home of members, 10:30 a.m.

LATE BLOOMERS

Co Ch Cynthia Jackson

23500 Bell Bluff Truck Trail

Alpine, CA 92001

4th Tues., home of members 9:30 a.m.

NORTH COUNTY ROSE SOCIETY

Pres: Mr. Dale Reeder (619) 757-5905

352 Lawndown Court

Oceanside, CA 92054

222 Jefferson St., Vista, CA Fri. 7:00 p.m.

NORTH COUNTY SHADE PLANT CLUB

Pres: Mrs. Drusilla C. Luers 439-3677

1635 Mt. View Avenue

Oceanside, CA 92054

3rd Sat. Ecke Bldg., Quail Gardens

Encinitas, CA 1:00 p.m.

OHARA SCHOOL OF IKEBANA LA JOLLA

Pres: Mrs. Donald Davis 672-0128

1211 Del Diablo Street

San Diego, CA 92129

OHARA SCHOOL OF IKEBANA SAN DIEGO

Pres: Mrs. Walter Bourland 276-4667

2936 Havasupai

San Diego, CA 92117

Centenarian, Mary Marston, an
 Honorary Life Member of
 San Diego Floral Association,
 passed away in July 1987.

SAN DIEGO FLORAL ASSOCIATION AND GARDEN CENTER – AFFILIATE MEMBERS (Continued)

ORGANIC GARDEN CLUB, SAN DIEGO

Pres: Mr. John E. Miller 460-8756
1302 Helix Street, No. 52
Spring Valley, CA 92077
3rd Fri., Rm 104, Casa del Prado 7:30 p.m.
Even 2 months starting Jan.

PACIFIC BEACH GARDEN CLUB

Pres: Mrs. M. E. Elder 593-2171
836 West Pennsylvania No. 202
San Diego, CA 92103

2nd Mon., Sep. thru Jun., 1:00 p.m.
Pacific Beach Community Center

PALOMAR CACTUS AND SUCCULENT SOCIETY

Pres: Mr. Gene Eisenberg (619) 487-1051
17592 Corbel Court
San Diego, CA 92128

PALOMAR DISTRICT

CALIFORNIA GARDEN CLUBS, INC.
Pres: Mrs. James Vajana 421-6504
4112 Country Trails
Bonita, CA 92002

PALOMAR ORCHID SOCIETY

Pres: Ted Pinger 436-2326

457 E. Glaucon

Leucadia, CA 92024

2nd Fri., Vista Senior Citizen Center
7:30 p.m.

POINT LOMA GARDEN CLUB

Pres: Myrna Hines
(619) 222-2299
935 Armada Terrace
San Diego, CA 92106

2nd Wed., Westminster Presby. Church
Talbot & Canon, 10:00 a.m.

PROFESSIONAL WOMEN'S HORTICULTURE AND LANDSCAPE ASSOCIATION (PWHLA)

Pres: Karen Kene 566-3851
P.O. Box 3424
San Diego, CA 92103
4th Wed., Jan., Mar., May, Sep.; 1st Wed Nov.

QUAIL GARDENS FOUNDATION, INC.

Library

P.O. Box 5

Encinitas, CA 92024

RANCHO SANTA FE GARDEN CLUB

Pres: Mr. John Rainsford
Hort. Ch: Corrine Gruenwald
P.O. Box 1696
Rancho Santa Fe, CA 92067
2nd Tues., Rancho Santa Fe Garden Club
Avenida de Acacias, Rancho Santa Fe
7:30 p.m.

SAN DIEGO ASSOCIATION OF PROFESSIONAL HORTICULTURISTS

Pres: Miss Cynthia Drake 271-8933
11121 Saunders Court
San Diego, CA 92131
4th Mon., Casa del Prado Rm. 104, 7:30 p.m.

SAN DIEGO BONSAI CLUB, INC.

Pres: Mr. Stan Childs 583-0562
P.O. Box 40037
San Diego, CA 92104
2nd Sun., Casa del Prado, 1:00 p.m.

SAN DIEGO BOTANICAL GARDEN FOUNDATION, INC.

Dr. Herbert A. Markowitz
224-8552

876 Armada Terrace

San Diego, CA 92106

SAN DIEGO BROMELIAD SOCIETY

Pres: Mr. Mitchell Gos 422-8557
639 First Ave., Chula Vista, CA 92010
1st Thurs., Byzantine Catholic Church
2235 Galahad Rd., Serra Mesa, 7:45 p.m.

SAN DIEGO CACTUS & SUCCULENT SOCIETY

Pres: Mr. Martin Mooney 427-6796
97 K Street, Chula Vista, CA 92011
2nd Sat., Casa del Prado, 1:30 p.m.

SAN DIEGO CAMELLIA SOCIETY

Pres: Cynthia Drake 271-8933
11121 Saunders Court
San Diego, CA 92131
3rd Wed., Casa del Prado, 7:30 p.m.

SAN DIEGO COUNTY BRANCH NATIONAL FUCHSIA SOCIETY

Pres: Mike Andrus (619) 729-3766
4910 Nellina Drive
Carlsbad, CA 92008

2nd Thurs., Palmquist School
1999 California St., Oceanside 7:00 p.m.

SAN DIEGO COUNTY DAHLIA SOCIETY

Pres: Leslie Pickford 278-1083

5350 Villa Bella

San Diego, CA 92111

4th Tues., Casa del Prado, 7:30 p.m.

SAN DIEGO COUNTY ORCHID SOCIETY

Pres: Genia Hammond 426-6831

1341 Park Drive

Chula Vista, CA 92011

1st Tues., Casa del Prado, 7:30 p.m.

SAN DIEGO DAYTIME

AFRICAN VIOLET SOCIETY

Pres: Beverly Decke 469-9975

7430 Standard Ave., La Mesa, CA 92041

2nd Mon., Fellowship Hall, Christ United

Methodist Church, 3295 Meade, 12 noon

SAN DIEGO EPHIPHYLLUM SOCIETY

Pres: Mr. Milton D. Turner 224-0955

2674 Willow Street

San Diego, CA 92106

2nd Wed., Casa del Prado, 7:30 p.m.

SAN DIEGO FERN SOCIETY

Pres: Mr. Donald Calard 438-9409

714 Argonauta Way

Carlsbad, CA 92008

3rd Thurs., Casa del Prado, 7:30 p.m.

SAN DIEGO FUCHSIA & SHADE PLANT SOCIETY

Pres: Mr. Bob Matlock 423-0213

1333 New Chatel Drive

San Diego, CA 92154

2nd Mon., Casa del Prado, 7:30 p.m.

SAN DIEGO GERANIUM SOCIETY

Pres: Mr. Jim Zemzik (714) 551-3264

15442 Orleans Circle

Irvine, CA 92714

2nd Tues., Casa del Prado, 7:30 p.m.

SAN DIEGO GESNERIAD SOCIETY

Pres: Arlen Madolen (619) 299-5415

211 West Walnut Ave., #6

San Diego, CA 92103

1st Thurs., Casa del Prado, 7:30 p.m.

SAN DIEGO/IMPERIAL COUNTIES IRIS SOCIETY

Pres: Dorothy Driscoll 463-6700

6338 Lake Athabasca Place

San Diego, CA 92119

SAN DIEGO ROSE SOCIETY

Pres: Mr. Cos Applegate 463-3555

3976 Agua Dulce Blvd.

La Mesa, CA 92047

3rd Mon., Casa del Prado, 7:30 p.m.

SAN DIEGUITO GARDEN CLUB

Pres: Mrs. Han (Pam) Kaspar

(619) 753-4097

1905 Juniperock

4th Wed., Encinitas Community Bldg.

Quail Gardens, Encinitas, 10 a.m.

SAN MIGUEL BRANCH

AMERICAN BEGONIA SOCIETY

Pres: Mrs. Toni Baker (619) 582-7516

6475 - 56th Street

San Diego, CA 92120

1st Wed., Casa del Prado, Rm. 104,

7:30 p.m.

SOGETSU SCHOOL OF IKEBANA

Pres: Mrs. Leroy Lahey 429-6198

2829 Flax Drive

San Diego, CA 92154

SOUTHWEST GROUP, JUDGES COUNCIL

Chr. Mrs. Edwin R. Gould 475-8996

2111 Rachael Avenue

San Diego, CA 92139

1st Wed., Casa del Prado, 10:00 a.m.

SOUTHWEST HEMEROCALLIS SOCIETY

Pres: Mr. C.R. Bowman 273-7937

3927 Sequoia Street

San Diego, CA 92109

1st Sat., Feb., Apr., Jun., Sep., Nov.

10 a.m., Quail Gardens Meeting Room

Quail Gardens Rd., Encinitas

SUN HARBOR BRANCH

NATIONAL FUCHSIA SOCIETY

Pres: Barney Gonsalves (619) 222-4254

4103 Tennyson Street

San Diego, CA 92107

4th Wed., Recreation Hall, Holy Trinity Church

THE VILLAGE GARDEN CLUB OF LA JOLLA

Pres: Dorothy C. Carroll 578-1484

8300 Hydra Lane

San Diego, CA 92126

4th Thurs., La Jolla United Methodist

6063 La Jolla Blvd., La Jolla 1:00 p.m.

THE VISTA GARDEN CLUB

Pres: Mrs. Robert Hendenberg 724-5032

4809 Ceanothus Place

Oceanside CA 92056

1st Fri., at 222 Jefferson St., Vista

Senior Service Center, 12 noon

THE WATER LILY SOCIETY

Pres: Kirk Strawn (301) 662-2230

c/o Charles B. Thomas, Secretary

P.O. Box 104

Buckeyestown, MD 21717-0104

Meeting 19-23, Aug. 1987, Denver, CO.

PROFESSIONAL AFFILIATES

BENNETT'S GARDEN CENTER

Attn: Fran Vallera 454-4241

7545 Draper Ave., La Jolla, CA 92037

BLOOMERS

Saks Fifth Avenue Courtyard

P.O. Box 353

La Jolla, CA 92038

DEVON HEDDING

3130 Browning Street

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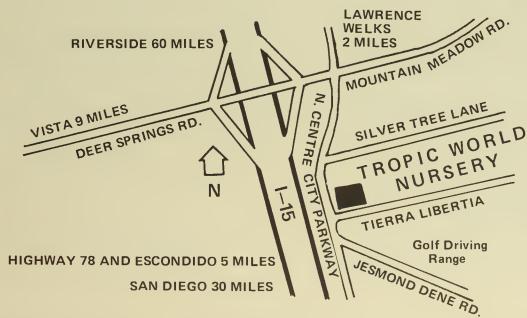
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